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Status Report
of the Commissioner of the Environment and Sustainable Development to the House of Commons

MARCH

Chemicals Management

Chapter 1
Substances Assessed Under the *Canadian Environmental Protection Act, 1999*

Office of the Auditor General of Canada

2008



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The March 2008 Status Report of the Commissioner of the Environment and Sustainable Development comprises The Commissioner's Perspective—2008, Main Points—Chapters 1 to 14, Appendices, and 14 chapters. The main table of contents for the Report is found at the end of this publication.

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Chapter

1

Substances Assessed under the *Canadian Environmental Protection Act, 1999*

All of the audit work in this chapter was conducted in accordance with the standards for assurance engagements set by The Canadian Institute of Chartered Accountants. While the Office adopts these standards as the minimum requirement for our audits, we also draw upon the standards and practices of other disciplines.

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Chemicals Management

Substances Assessed under the *Canadian Environmental Protection Act, 1999*

Main Points

What we examined

About 23,000 chemical substances used commercially in Canada were included in an inventory published in 1994, the Domestic Substances List. Under the *Canadian Environmental Protection Act, 1999* (CEPA, 1999), Environment Canada and Health Canada are responsible for identifying which of these substances present an unacceptable risk to human health and the environment. Once identified as toxic, a substance is controlled according to the degree of risk it presents. By 1995, the government had listed 69 substances or groups of substances that it had determined were priorities for assessment.

In 2002, we reported that Environment Canada and Health Canada were taking too long to complete the assessments and publish decisions on all 69 substances so controls could be put in place for managing their risks when necessary.

For this status report, we examined the progress made by Environment Canada and Health Canada in managing risk assessments under CEPA, 1999, including the status of the 69 priority substances. We also looked at the departments' initiative for addressing new risk assessment priorities out of the 23,000 substances on the Domestic Substances List.

Why it's important

Chemical substances enter our air, water, land, and food from many sources. Because Canadians cannot always tell which chemical substances they may come in contact with, they rely on government to ensure that chemicals in the Canadian market present no unacceptable risks to their health and the environment.

What we found

- The federal government has made satisfactory progress since 2002 in managing risk assessments of chemical substances that could be toxic.
- In September 2006, as a result of an initial review of the Domestic Substances List, Environment Canada and Health Canada identified 4,300 substances that needed further assessment. To complete the assessments by 2020, the departments have adjusted the risk assessment process based on lessons learned from previous evaluations, set clear objectives and timelines, and identified

priorities, and they are taking steps to ensure that they will have enough resources to do the work.

- The risk assessments of priority substances that were underway in 2002 have been completed for the most part. However, the assessments of three of those substances have yet to be finalized—even though the departments have evidence that two of them are likely toxic and present risks to human health and the environment. Until the government concludes whether the outstanding chemical substances are toxic, no measures under CEPA, 1999 can be put in place to control the risks they may represent.

The departments have responded. Environment Canada and Health Canada have accepted our recommendation. Their detailed responses follow the recommendation in the chapter.

Introduction

Chemical substance—For the purpose of this audit, we refer to all substances (chemical, radiological, and biological) that are assessed or managed under the *Canadian Environmental Protection Act, 1999* as chemical substances.

1.1 Chemical substances are used and found everywhere in Canadian society—in our homes, cars, farms, industries, computers, hospitals, clothing, and food. They contribute to our quality of life, economic well-being, and industrial competitiveness.

1.2 Chemical substances enter our air, water, land, and food from many sources, including industries, agricultural runoff, contaminated sites, vehicle emissions, and consumer products. However, some chemical substances are harmful or could be harmful to the health of Canadians and to their environment (Exhibit 1.1). Toxic substances have been linked to lung disease, reproductive problems and birth defects, cancer, developmental disorders, and other illnesses or disorders. There are various types and definitions of toxic substances. While the term "toxic" has an everyday meaning, it can also have a precise legal meaning (for example, in legislation such as the *Canadian Environmental Protection Act, 1999*).

Toxic substance—A substance that is "entering or may enter the environment in a quantity or concentration or under conditions that (a) have or may have an immediate or long-term harmful effect on the environment or its biological diversity; (b) constitute or may constitute a danger to the environment on which life depends; or (c) constitute or may constitute a danger in Canada to human life or health."

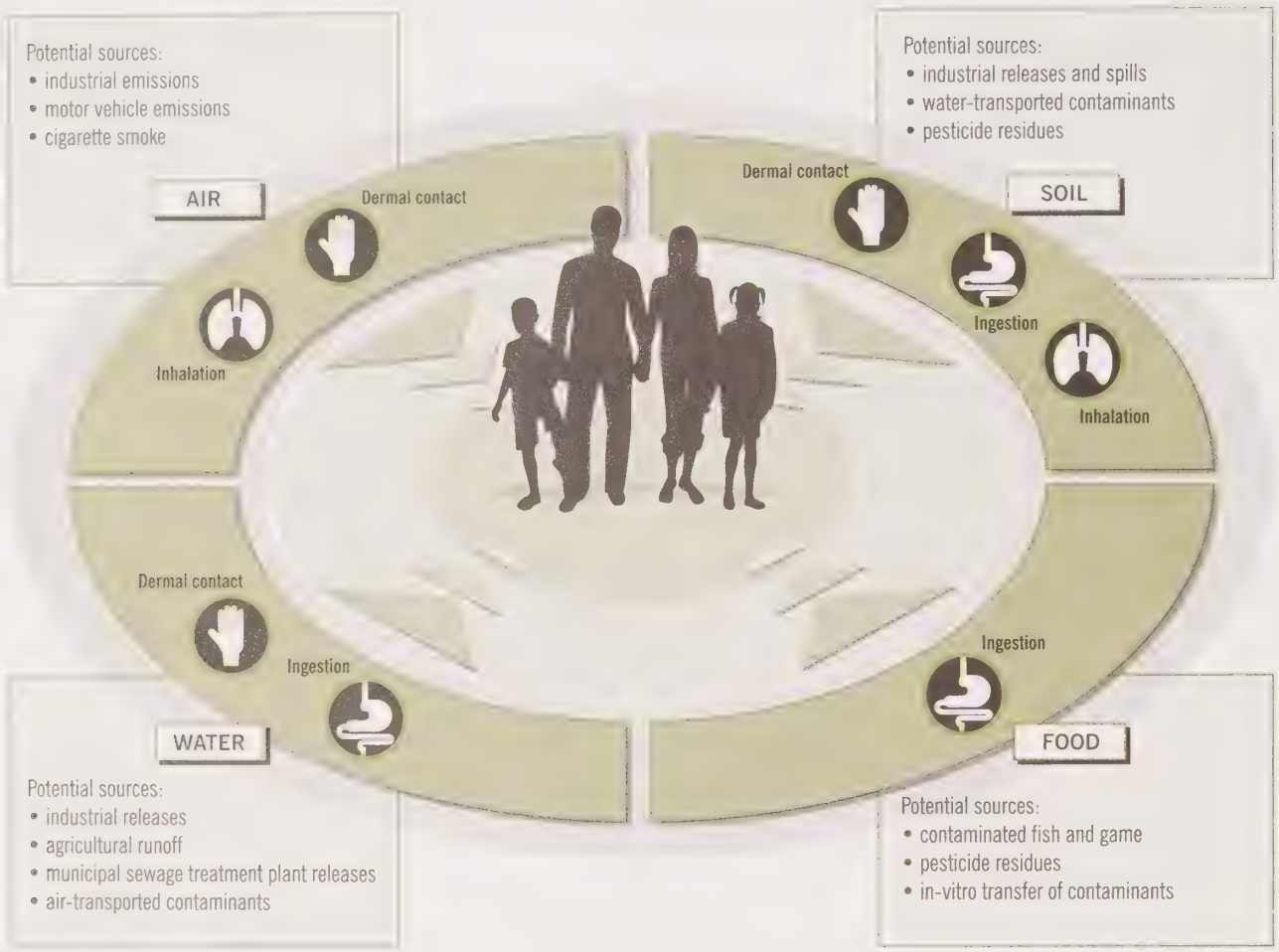
Source: Source: *Canadian Environmental Protection Act, 1999, s. 64*

1.3 In Canada, all levels of government play a role in managing chemical substances. The federal government's main responsibilities in managing chemical substances are to identify which substances pose a risk to human health or the environment and to determine what must be done to avoid or minimize the use and release of toxic substances. The *Canadian Environmental Protection Act, 1999*, which replaced the earlier environmental protection legislation enacted in 1988, is one of the primary federal legal tools for assessing and managing chemical substances. Among other things, the Act requires the ministers of the Environment and of Health to identify and determine which existing chemical substances in Canada pose a risk to human health and the environment.

1.4 Prior to 1988, chemical substances were manufactured or imported into Canada without a systematic assessment of their effects on human health and the environment. This changed in 1988 with the creation of the *Canadian Environmental Protection Act*. Since 1988, all new chemical substances must pass a risk assessment by Environment Canada and Health Canada to determine if they are toxic or capable of becoming toxic, before they are permitted to enter the Canadian market. However, there are about 23,000 chemical substances in the Canadian market that did not undergo this assessment as these substances were in Canadian commerce prior to introduction of the Act in 1988. These substances are listed on the Domestic Substances List—an inventory of about 23,000 substances manufactured in, imported into, or used in Canada on a commercial scale. The List was published in 1994.

New chemical substances—Substances that were introduced into the Canadian market after the *Canadian Environmental Protection Act* became law in 1988. The 1999 revised version of the Act ensures that all new substances are assessed to determine if they are toxic or capable of becoming toxic to the environment or human health. If they are, restrictions will be imposed. Substances that are not presently on the Domestic Substances List are considered to be new to Canada.

Exhibit 1.1 **Major pathways of human exposure to environmental contaminants**



Risk assessment An investigation of environmental and human health risks that involves the analysis of data on a substance's life cycle: entry into the environment; the concentration to which humans, animals, and plants are exposed; and the substance's effects on organisms and ecosystems. A risk assessment compares exposure concentrations with concentrations causing effects to determine if adverse effects are likely.

1.5 To address this legacy of existing substances, Environment Canada and Health Canada assess and manage environmental and human health risks in two distinct phases. Scientists must first conduct a risk assessment to determine whether a substance is "toxic" (or capable of becoming toxic) as defined under the *Canadian Environmental Protection Act, 1999*, based on available data. In the majority of cases to date, when a substance meets the criteria for being toxic under the Act, the ministers of the Environment and of Health have recommended its addition to the List of Toxic Substances in Schedule 1 of the Act. The decision to add the substance to Schedule 1 rests with the Governor in Council. The second phase consists of moving the substance into the risk management stage. Adding a substance to Schedule 1 empowers the Government of

List of Toxic Substances—A list of toxic substances, in Schedule 1 of the *Canadian Environmental Protection Act, 1999*, which are deemed to pose a risk to human health or the environment. The list is available and periodically updated on the CEPA Environmental Registry website.

Governor in Council—The Governor General acting on the advice of the Privy Council, as the formal executive body that gives legal effect to those decisions of Cabinet that are to have the force of law.

Canada to develop and implement risk management measures that reduce or eliminate harmful effects that the toxic substance poses to human health or the environment throughout its life cycle.

1.6 The ministers of the Environment and of Health created two priority substances lists, one in 1989 and another in 1995. From the two lists, a total of 69 substances (or groups of substances) were identified as needing to be assessed for the toxicity risk that they pose to the health of Canadians and their environment. These assessments were to be done within five years of being identified.

What we found in 2002

1.7 In 2002, we followed up on our 1999 audit and found that Environment Canada and Health Canada still had not reached conclusions on the toxicity risks of about 20 of the 69 substances that were identified as requiring priority assessments by the year 2000. We noted that the departments were taking too long to complete these assessments and recommended that they quickly reach formal conclusions. The departments made a commitment to continue strengthening their capacity to complete the assessments within available resources, but they did not indicate the specific actions they would take.

Events since 2002

1.8 As required under the *Canadian Environmental Protection Act, 1999*, Environment Canada and Health Canada completed an initial review of the approximately 23,000 chemical substances on the Domestic Substances List by September 2006. As a result, they identified about 4,300 substances needing further assessment to determine if they are toxic or capable of becoming toxic to human health or the environment.

1.9 On 8 December 2006, the government announced Canada's new Chemicals Management Plan initiative. With this initiative, the government aims to complete the toxicity risk assessments of the 4,300 substances by 2020.

Focus of the audit

1.10 The objective of our audit was to assess the progress that Environment Canada and Health Canada had made in addressing key findings and a recommendation made in prior audits on the management of toxicity risk assessments of existing substances under

several lines of evidence to determine overall uncertainties in making decisions in all phases of a risk assessment.

Precautionary principle—A principle that is to [illegible] of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation

the *Canadian Environmental Protection Act, 1999*, including determining the status of the initial 69 priority substances. We also looked at the initiative in place for assessing the set of about 4,300 priority substances identified in September 2006 as needing further toxicity risk assessments. We examined whether the departments have clear objectives and timelines, sufficient human resource capacity, and guidelines for applying a weight-of-evidence approach and the precautionary principle to fast-track the toxicity risk assessments of the 4,300 substances identified.

1.11 More details on the audit objective, scope, approach, and criteria are in **About the Audit** at the end of this chapter.

Observations and Recommendation

Priority Substances Lists

Environment Canada and Health Canada reached conclusions on the toxicity of most priority substances

1.12 In 2002, we noted that Environment Canada and Health Canada did not meet their timelines to complete the assessments of substances on the priority substances lists, many of which could be endangering human health or the environment. Since 2002, we found that Environment Canada and Health Canada have reached conclusions on the toxicity of 66 out of 69 priority substances on the two priority substances lists (Exhibit 1.2). Of these substances, 42 were declared toxic, and control measures were put in place by the federal government.

Exhibit 1.2 **Progress in addressing our 1999 recommendation and 2002 finding on priority risk assessments is satisfactory**

Recommendation and finding	Progress
Recommendation. Environment Canada and Health Canada should forthwith reach a formal conclusion on the toxicity of substances for which they have not yet done so. (1999 Report of the Commissioner of the Environment and Sustainable Development (CESD), Chapter 3, see paragraph 3.128).	Satisfactory
Finding. It is taking too long to complete the assessments of priority substances on the priority substances lists, many of which could be endangering the environment or human health. It is important that their assessment be completed so that management controls can be put in place. (2002 CESD Report, Chapter 1, see paragraph 1.44)	Satisfactory

Satisfactory—Progress is satisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation and finding were made.

Unsatisfactory—Progress is unsatisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation and finding were made.

An alternative approach has changed how some toxic substances are controlled

Radionuclides—Uranium and uranium compounds contained in effluents from uranium mines and mills.

Used crankcase oil—Lubricating oil removed from the crankcase of internal combustion engines.

1.13 Road salts, **radionuclides**, and **used crankcase oil**, although found to be toxic, as defined under the *Canadian Environmental Protection Act, 1999*, (CEPA, 1999) were not listed on Schedule 1 of the Act.

1.14 In 2001, the ministers of the Environment and of Health published their intent to recommend that road salts be added to Schedule 1. While road salts have not been added to Schedule 1, Environment Canada has developed a code of practice designed to help municipalities and other road authorities better manage the use of road salts. The Department reported that about 200 road authorities across Canada have agreed to implement measures such as preparing salt management plans to reduce the effects that road salts may have on the environment.

1.15 The ministers of the Environment and of Health have set a precedent in how they have chosen to deal with radionuclides and used crankcase oil. These substances were assessed as toxic under the Act, but the ministers did not recommend their addition to Schedule 1 as they are being controlled by other federal or provincial/territorial legislation.

1.16 Environment Canada initiated this alternative approach so that risks would be managed by the federal law or by the level of government best situated to take action. Under this new approach, Environment Canada and Health Canada are responsible for monitoring whether these other means are sufficient to control the risks to human health and the environment, and assessing if the decision not to list the substances in Schedule 1 of the Act should be revisited.

1.17 We found that although radionuclides and used crankcase oil have not been listed on Schedule 1, Environment Canada demonstrated that risk management measures are in place for those substances. For radionuclides, controls are to be enforced under the *Nuclear Safety and Control Act* at the two sites identified as problematic in the risk assessment. In the case of used crankcase oil, Environment Canada indicated that the four areas of concern identified in the risk assessment are being managed by provincial and territorial governments, and it has received assurance that control measures are in place.

1.18 At the time of our audit, Environment Canada's website reported on actions taken to manage the risks of radionuclides, but it did not mention used crankcase oil. These substances are not in Schedule 1 of the *Canadian Environmental Protection Act, 1999*, and there is currently no legal requirement to list these substances in the CEPA

Environmental Registry. As well, there is no public reporting on Environment Canada's website to provide assurance that these substances are being adequately controlled.

1.19 **Recommendation.** Environment Canada and Health Canada should make publicly available the list of those substances that have been assessed as toxic under the *Canadian Environmental Protection Act, 1999* but are not listed in Schedule 1 and are being risk managed outside the Act. This list should also include information on what controls are in place.

Environment Canada's response. Environment Canada accepts this recommendation and will make such a list available in 2008 through the Government of Canada's Internet website for the Chemicals Management Plan and the CEPA Environmental Registry.

Health Canada's response. Health Canada will give the recommendation favourable consideration in consultation with Environment Canada and in the context of the Parliamentary Review of the *Canadian Environmental Protection Act, 1999*, which is currently under way.

Toxicity risk assessments of three substances remain outstanding

1.20 **Two risk assessments are overdue.** Aniline and chlorinated paraffins (Exhibit 1.3) were assessed as either toxic or likely to be toxic and yet were not listed in Schedule 1 of the *Canadian Environmental Protection Act, 1999*. These assessments were to have been completed 14 years ago.

Exhibit 1.3 **Common uses and potential impacts of aniline and chlorinated paraffins**

Aniline	Chlorinated paraffins
• Aniline is used to produce rubber and polymers. About 1.1 tonnes of aniline are released into the Canadian environment each year. • Potential impacts include headache, abnormally rapid heart rate, confusion, convulsions, coma, and death.	• Chlorinated paraffins are used mainly as plasticizers and flame retardants, as well as additives in lubricating oils and in metal-working fluids to lower the heat and allow faster metal working. • The total reported annual use of chlorinated paraffins in Canada was about 3,000 tonnes in 2000 and 2001. • Impacts include a potential carcinogen and bioaccumulation in aquatic organisms.

Source: Environment Canada and Health Canada

1.21 An initial risk assessment report issued in 1994 found that aniline is not harmful to the environment, but due to insufficient data, the report was unable to conclude whether the substance represents a danger to human health. A follow-up risk assessment report in 2002 provided additional evidence that aniline is likely toxic to human health. At the time, Health Canada invited companies using aniline to provide relevant data and specified that failing to do so would result in the substance being declared toxic under the Act; the data was not received. On 5 October 2002, the Department formally announced its intention to recommend that the substance be listed on Schedule 1. Five years later, aniline does not appear in Schedule 1 and Health Canada is still conducting assessment work to establish sources of exposure. The Department plans to complete the toxicity risk assessment for aniline by mid-2008.

1.22 Risk assessments carried out by Environment Canada and Health Canada in 1993, 2003, and 2004 indicated that chlorinated paraffins should be considered toxic under the Act. However, only in June 2005, 12 years after the first report was issued, did the ministers finally recommend that the substance be listed in Schedule 1. However, this has not been done yet. As of April 2007, Environment Canada had completed its final assessment and Health Canada was still completing its assessment work.

1.23 After 18 years of risk assessment work and recurring evidence of toxicity, the federal government has not added aniline and chlorinated paraffins to the List of Toxic Substances in Schedule 1. As a result, control measures to manage risks to both human health and the environment are not in place for those substances under the Act.

1.24 **Two risk assessments were suspended.** In 2000, complete information on the effects of ethylene glycol and aluminum salts (Exhibit 1.4) on human health was not available, and the risk assessments of these substances were suspended for five and six years respectively. Environment Canada concluded that both substances are unlikely to be toxic to the environment. Health Canada recently completed its assessment of the human health impacts of ethylene glycol. As a result, in December 2007, the ministers of the Environment and of Health proposed to recommend that ethylene glycol be added to Schedule 1 of CEPA, 1999. Health Canada plans to complete its assessment of aluminum salts by the end of 2008.

1.25 Only when the outstanding assessments are completed will the government be able to implement management controls where warranted under CEPA, 1999.

Exhibit 1.4 **Common uses and potential impacts of aluminum salts and ethylene glycol**

Aluminum salts	Ethylene glycol
• Municipalities use aluminum salts to treat both drinking water and wastewater. This use accounted for about 75 percent of the 270,000 tonnes of aluminum salts used in Canada in 1996. • Aluminum salts are also used in preparing antiperspirants, manufacturing rubber, and waterproofing leather and textiles. • Potential impacts include links to Alzheimer's disease.	• Ethylene glycol is used in antifreeze products, windshield washer solution, heat transfer fluids, and the manufacture of polyester. • The highest reported use is for de-icing aircraft. In 1996, about 7,700 tonnes of ethylene glycol were used for de-icing aircraft in Canada. • Potential impacts include kidney damage.

Source: Environment Canada and Health Canada

Domestic Substances List

1.26 A review of the Domestic Substances List was completed in 2006. This categorization process did not aim to establish the risks to the environment or human health. It was a mechanical process designed to systematically identify substances that would qualify for a risk assessment. As a result, Environment Canada and Health Canada identified about 4,300 substances, from about 23,000 chemical substances, as needing further assessment to determine if they were toxic to human health or the environment. Given the slow progress to assess the first 69 priority substances, the revised *Canadian Environmental Protection Act* of 1999 introduced provisions that would lead to faster assessment of a greater number of substances.

1.27 For this audit, we expected both Environment Canada and Health Canada to have identified clear objectives and timelines to fast-track the assessment of these 4,300 substances. We also expected that they would have addressed resources and governance impediments identified in past audits, and developed clear and consistent guidance on applying the precautionary principle.

An initiative is in place to assess 4,300 substances of concern on the Domestic Substances List

1.28 On 8 December 2006, the federal government announced its Chemicals Management Plan initiative to improve how chemical substances are managed and to minimize threats to human health and the environment. The initiative set a timeline to evaluate by 2020 all 4,300 substances identified as requiring further assessment. The Chemicals Management Plan initiative requires Environment

Canada and Health Canada to report in the 2010–11 fiscal year on the results and cost-effectiveness of this initiative so that adjustments can be made if necessary.

Making government information public

Environment Canada's and Health Canada's methodologies, results, and plans for toxicity risk assessment are available through the government's Chemicals Management Plan website (also available on the CEPA Environmental Registry website). Risk assessments are subject to peer reviews and also to public comments through the *Canada Gazette*.

The *Canada Gazette* provides official public notices to Canadians on regulations and acts of Parliament from government departments and agencies.

1.29 In the majority of cases, Environment Canada and Health Canada do not intend to conduct exhaustive reviews of all available data, as was done for the 69 priority substances on the two priority substances lists. Environment Canada officials have indicated that the reviews will rely on the use of conservative assumptions and focus on the most critical studies in order to reach a conclusion on toxicity, unless an in-depth risk assessment is required.

1.30 Environment Canada and Health Canada have been piloting a new approach with substances from the Domestic Substances List. We found that Environment Canada extracted lessons learned from the pilot assessments in producing draft guidance documents for assessors. As of April 2007, Health Canada had not yet produced such guidance for its assessors but was planning to do so.

1.31 To plan the assessment of the 4,300 substances, Environment Canada and Health Canada developed a priority-setting process. Using this process, they identified 200 substances that present the greatest risk. These 200 substances are currently being assessed as part of the Ministerial Challenge Program, which requires industry to provide relevant information on each substance within six months of request by the government. Both departments plan to assess the risk of these substances by 2010, and the departments believe that the substances will likely require new controls to reduce or eliminate the harmful effects they pose to human health or the environment.

Recent results from risk assessments

To date, risk assessments aimed at addressing the 4,300 substances of concern on the Domestic Substances List led to the prohibition or proposed prohibition of three categories of substances found to be toxic under the *Canadian Environmental Protection Act, 1999*:

- flame retardants (Polybrominated Diphenyl Ethers, commonly referred to as PBDEs);
- repellents and fire-fighting foams (Perfluorooctane Sulfonate, commonly referred to as PFOS); and
- cleaning solvents; thermal treatments; and electric transformer fluids (respectively, 2-Methoxyethanol, Pentachlorobenzene, and Tetrachlorobenzenes).

According to Environment Canada, regulations are being put in place to restrict the manufacture, import, and use of these substances under the Act.

1.32 Of the 4,300 substances identified for further assessment, Environment Canada indicated that it has already assessed 50 that are high priority. It has also selected about 1,200 substances of less concern for rapid screening. The rapid screening exercise was completed, and the results were released in June 2007. The results identified about 750 substances that are unlikely to cause environmental harm, and about 450 substances that will require further assessment to determine if they are toxic under the *Canadian Environmental Protection Act, 1999*.

1.33 To address the remaining substances, Environment Canada and Health Canada will assess about 900 high- and medium-priority substances by grouping together classes of chemicals and undertaking joint reviews with other countries. An additional 865 substances, reported to be no longer used commercially in Canada, will be subject to a separate assessment process under the Significant New Activity

Controls of CEPA, 1999 if the substances are reintroduced. The remaining 1,085 substances will be assessed at a pace of about 110 assessments a year between 2010 and 2020 (Exhibit 1.5).

Exhibit 1.5 Progress in addressing our finding on assessing the substances on the Domestic Substances List is satisfactory

Finding	Progress
We expect that the departments have ensured that substances of concern are fast-tracked through the risk assessment process. (2002 Report of the Commissioner of the Environment and Sustainable Development, Chapter 1, see paragraph 1.86)	Satisfactory

Satisfactory—Progress is satisfactory, given the significance and complexity of the issue, and the time that has elapsed since the finding was made.

Unsatisfactory—Progress is unsatisfactory, given the significance and complexity of the issue, and the time that has elapsed since the finding was made.

Human resource capacity is being developed

1.34 In our 1999 and 2002 audits, we noted a growing gap between demands for toxicity risk assessments and actual resources to complete them. We reported that shortages in scientific capacity would impede the government's capacity to fulfill its mandate. As well, on many occasions, Health Canada reported insufficient staffing levels to fulfill its responsibilities under the *Canadian Environmental Protection Act, 1999*, and stressed that resource shortfalls represented an ongoing risk to complete toxicity risk assessments.

1.35 In 2004, Health Canada reported that its working relationship with Environment Canada to implement the requirements of CEPA, 1999 was weak and dysfunctional, and that communications and coordination between the two departments were fragmented. As a result, in March 2007, senior management from both departments formalized their intention to work together by aligning priorities, coordinating program delivery, and developing a human resources management strategy. The strategy includes, among other things, the recruitment of about 350 scientists over the next four years.

1.36 The Chemicals Management Plan initiative announced in December 2006 provides about $40 million initially over four years for both departments to conduct toxicity risk assessments. Officials from both departments indicated that this initial funding should be sufficient to build capacity and put them on a path to complete by 2020 the assessment of the 4,300 substances identified from the Domestic Substances List (Exhibit 1.5).

Guidance on applying the precautionary principle has been completed

1.37 Section 76.1 of the *Canadian Environmental Protection Act, 1999* directs the ministers to apply a weight-of-evidence approach and the precautionary principle (see margin definitions on page 1-6) when conducting and interpreting the results of the toxicity assessments. Our previous audits raised concerns about the lack of clear and consistent guidance on applying the precautionary principle in weighing scientific uncertainty in decision making. We identified substances of concern to human health or the environment for which the precautionary principle had not been applied due to unclear guidance. As a result, no controls for these substances had been put in place.

1.38 Since our 2002 audit, we found that Environment Canada and Health Canada have produced guidance on using a weight-of-evidence approach for risk assessments. They also have developed guidance to use the precautionary principle in making decisions about toxicity (Exhibit 1.5). This guidance describes how the scientific research and risk assessment practices are to support the precautionary principle. As well, it describes actions that may be taken to reduce the threat of serious or irreversible damage from a substance. The guidance aims to reduce risks to human health and the environment in a cost-effective and transparent manner.

Conclusion

1.39 Since 2002, Environment Canada and Health Canada have made satisfactory progress in managing toxicity risk assessments under the *Canadian Environmental Protection Act, 1999* (CEPA, 1999).

1.40 Our 2002 audit identified a backlog of about 20 of 69 priority substances for which no conclusion on toxicity had been reached. This assessment process was to have been completed in 2000. In this follow-up audit, we found that Environment Canada and Health Canada have reached conclusions on toxicity for 66 out of 69 priority substances. Two of the remaining substances—aniline and chlorinated paraffins—have been under assessment for 18 years and were found to be either toxic or likely to be toxic to human health or the environment. The risk assessment for aluminum salts was suspended and is now scheduled to be completed by the end of 2008. Only when the outstanding assessments are completed will the government be able to implement controls to manage the risks to human health or the environment where warranted under CEPA, 1999.

1.41 In September 2006, an initial review of about 23,000 substances on the Domestic Substances List identified about 4,300 substances requiring an assessment by 2020 to determine if they are toxic. To ensure that the 4,300 substances that need to be assessed are fast-tracked through the risk assessment process, Environment Canada and Health Canada have developed clear objectives and timelines under the Chemicals Management Plan initiative, and they have adjusted the risk assessment process based on lessons learned from previous evaluations. As well, the departments have developed guidance to assessors on how to apply the precautionary principle. The additional funding announced as part of the Chemicals Management Plan initiative is expected to address resource and governance issues that were raised in past audits and put the departments on a path to complete the assessment of the 4,300 substances by 2020.

About the Audit

Objectives

Our overall audit objective was to determine whether Environment Canada and Health Canada have made satisfactory progress in addressing key findings and a recommendation made in prior audits with respect to managing risk assessments of selected substances under the *Canadian Environmental Protection Act, 1999*.

Our sub-objectives were to determine whether Environment Canada and Health Canada have made satisfactory progress in

- completing the assessment of substances on the priority substances lists, pursuant to paragraph 1.44 of the 2002 Commissioner of the Environment and Sustainable Development (CESD) Report and the recommendation in paragraph 3.128 of the 1999 CESD Report; and
- ensuring that substances of concern on the Domestic Substances List, identified as priorities in 2006, are fast-tracked through the risk assessment process, pursuant to paragraph 1.86 of the 2002 CESD Report.

Scope and approach

In 1999 and 2002, we made observations on a broad range of government operations intended to manage chemical substances, including scientific research, monitoring, risk assessment, and risk management activities in eight federal departments and agencies. In this follow-up audit, we focused on progress that Environment Canada and Health Canada had made on toxicity risk assessments that were under way in 1999 and 2002, and we examined their initiative to conduct risk assessments of about 4,300 existing substances that have not yet been assessed. Issues that we examined in this audit were selected based on their current relevance and significance.

In carrying out our audit, we interviewed government officials from Environment Canada and Health Canada and reviewed relevant internal documentation and public reporting.

We used the conclusions for each re-audited issue as well as professional judgment to arrive at a rating to indicate whether the departments have made satisfactory or unsatisfactory progress in addressing each of the selected original findings and the recommendation.

In our audit, we did not consider new substances, which are subject to a different process, and we did not examine the implementation of risk management measures for substances already declared toxic. We followed up on past observations on the lack of operational guidance in applying the precautionary principle but did not consider the actual implementation of such guidance in interpreting the results of toxicity risk assessments. We also did not consider the evaluations of pesticides, which are managed under the *Pest Control Products Act*. Chapter 2 of this report deals with pesticide safety and accessibility.

Criteria

We expected that the toxicity risk assessments for identified substances on the priority substances lists that were not complete in 2002 would have now been completed. As appropriate, we looked at the rationale for decisions made; factors underlying unfinished work, including related risks and implications; and timelines for completion.

The criteria for the audit of substances on the priority substances lists were derived from a recommendation and findings from the 1999 and 2002 Reports of the Commissioner of the Environment and Sustainable Development (CESD) on Toxic Substances.

The criteria for the audit of substances on the Domestic Substances List were derived from the *Canadian Environmental Protection Act, 1999*, the Federal Council of Science and Technology Advisors, and findings from the Auditor General's December 2002 Report, Chapter 9.

We also expected that, in undertaking risk assessments for substances on the Domestic Substances List, Environment Canada and Health Canada would have the following in place:

- clear objectives and timelines;
- sufficient human resource capacity;
- a process for setting priorities for the assessments to be undertaken;
- arrangements to openly communicate and share information from toxicity risk assessments with industry, other jurisdictions, and the public;
- provisions for peer review;
- guidelines for applying a weight-of-evidence approach and the precautionary principle; and
- mechanisms for reasonable review and adjustment.

Audit work for this chapter was substantially completed on 15 June 2007.

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Appendix List of recommendations

The following recommendation is found in Chapter 1. The number in front of the recommendation indicates the paragraph number where it appears in the chapter. The numbers in parentheses indicate the paragraph numbers where the topic is discussed.

Recommendation	Response
Priority Substances Lists	
1.19 Environment Canada and Health Canada should make publicly available the list of those substances that have been assessed as toxic under the *Canadian Environmental Protection Act, 1999* but are not listed in Schedule 1 and are being risk managed outside the Act. This list should also include information on what controls are in place. **(1.13–1.18)**	**Environment Canada's response.** Environment Canada accepts this recommendation and will make such a list available in 2008 through the Government of Canada's Internet website for the Chemicals Management Plan and the CEPA Environmental Registry. **Health Canada's response.** Health Canada will give the recommendation favourable consideration in consultation with Environment Canada and in the context of the Parliamentary Review of the *Canadian Environmental Protection Act, 1999*, which is currently under way.

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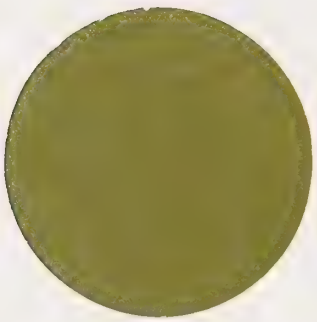
Status Report
of the Commissioner of the Environment and Sustainable Development to the House of Commons

MARCH

Chemicals Management

Chapter 2
Pesticide Safety and Accessibility

Office of the Auditor General of Canada



2008



Status Report
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The March 2008 Status Report of the Commissioner of the Environment and Sustainable Development comprises The Commissioner's Perspective—2008, Main Points—Chapters 1 to 14, Appendices, and 14 chapters. The main table of contents for the Report is found at the end of this publication.

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Chapter

2

Pesticide Safety and Accessibility

All of the audit work in this chapter was conducted in accordance with the standards for assurance engagements set by The Canadian Institute of Chartered Accountants. While the Office adopts these standards as the minimum requirement for our audits, we also draw upon the standards and practices of other disciplines.

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Chemicals Management
Pesticide Safety and Accessibility

Main Points

What we examined

Health Canada's Pest Management Regulatory Agency is the federal agency responsible for regulating pesticides in Canada. The Agency's primary objective is to prevent unacceptable risks to people and the environment from the use of pesticides. It does this by evaluating proposed new pesticides and registering the acceptable ones for use in Canada, re-evaluating older pesticides against current health and environmental standards, and setting the maximum levels of residues of active ingredients allowable on foods. The Canadian Food Inspection Agency also plays a role by testing whether the residues of active ingredients used in pesticides are within allowable limits in fresh fruits and vegetables that are imported or intended for export or inter-provincial trade.

This audit examined the progress made by the federal government in selected aspects of managing the safety and accessibility of pesticides since our 2003 audit. We looked at the Pest Management Regulatory Agency's application of its own procedures for evaluating and registering new pesticides, the application of its own procedures for re-evaluating older registered pesticides, and the time it takes to get new, possibly safer pesticides on the market for use.

We also looked at the progress made by the Canadian Food Inspection Agency in increasing the scope of its program that tests for residues of active ingredients in fresh fruits and vegetables.

Why it's important

Many pesticides are designed to be toxic to pests. They play an important role in maintaining Canada's food supply by protecting food crops. Canadians also use pesticides to control weeds on lawns, insects in gardens and homes, and parasites on pets. There are approximately 5,000 pesticides currently registered for use in Canada. When used improperly, pesticides can have serious consequences for human health and the environment, which can range from respiratory tract problems to cancer or the death of fish or birds.

What we found

- Since our 2003 audit, the federal government has made satisfactory progress in selected aspects of managing the safety and accessibility of pesticides. We concluded that based on our sample of newly registered pesticides, the Pest Management Regulatory Agency has applied its procedures for evaluating new pesticides consistently, completely, and with adequate documentation. It ensures that companies applying to register a new pesticide submit all the information needed, at the required standard of quality, to assess the risks associated with the pesticide. It has shortened the time it takes to evaluate new pesticides while still following all the steps in its evaluation process. The Agency has taken action to give Canadian growers access to new, more effective, and possibly safer pesticides—particularly minor-use pesticides (those used in small quantities or on crops where few pest control options exist), which manufacturers tend not to register in Canada because of low potential sales volumes.
- The Pest Management Regulatory Agency is consistently applying its procedures to re-evaluate older pesticides that were registered before new standards were put in place in 1995. Although it has completed a number of re-evaluations since our last audit, many more await completion and the Agency's target continues to change. In addition, the Agency never developed a detailed action plan to help meet its timelines.
- The Canadian Food Inspection Agency has increased the number of active ingredients it analyzes in its program that tests for residues in fresh fruits and vegetables. The Agency now has more information on the active ingredients that are not included in its residue testing program. It is in the early stages of assessing which of these active ingredients are priorities for attention, based on their toxicity and the potential for human exposure to them.

Introduction

Active ingredient—the ingredient of a pesticide that actually controls the targeted pest. The active ingredient is combined with other ingredients to make a pesticide or end use product.

Formulant—ingredient of a pesticide that serves a purpose other than the actual control of the targeted pest. For example, an ingredient's purpose can be to give solubility to an end use product. Formulants can include sugar, propane, or citric acid.

End use product—a product, organism, or substance that is used to control, destroy, attract, or repel a pest, or to lessen or prevent its harmful or troublesome effects. It has been manufactured, packaged, and labelled in a form that is usable by the consumer. For brevity, we have referred to such products as pesticides in this chapter.

2.1 Pesticides are used in the production of many foods Canadians eat. They are also used in paint to stop mildew; and they are used to control weeds on lawns, insects and rodents in gardens and homes, and parasites on pets. Many farmers consider pesticides essential tools to preventing the damage to crops caused by pests such as weeds, insects, or disease. Pesticides are made up of two components: the **active ingredient** and the **formulant**. Combined, these ingredients form an **end use product** known as a pesticide. There are approximately 5,000 pesticides currently registered for use in Canada.

2.2 Because most pesticides are designed to be toxic to pests, they can also present potentially serious threats to health or the environment if they are misused. For example, Chlorpyrifos is a pesticide used to control pests on foods such as wheat and on non-foods such as forests. Symptoms of overexposure to Chlorpyrifos can include muscle weakness, dizziness, and sweating.

2.3 Some pesticides have been linked to causing cancer, reproductive disorders, and respiratory tract problems in humans, or the deaths of fish or birds. Because of the risks, these products are regulated by municipal, provincial, territorial, and federal governments. Health Canada's Pest Management Regulatory Agency determines which pesticides can be used in Canada and under what conditions. The Agency's mandate is to protect human health and the environment from unacceptable risks associated with exposure to or use of the pesticide. It does this by administering and applying the *Pest Control Products Act*. The Canadian Food Inspection Agency also plays a role by testing for active ingredients in fresh fruits and vegetables that are imported, intended for export, or traded between provinces, in order to verify that the active ingredient residues do not exceed the limits set by the Pest Management Regulatory Agency.



To protect human health, a sign indicates that people should keep off a freshly sprayed lawn.

2.4 Only pesticides that are registered for use under the *Pest Control Products Act* can be imported, sold, or used in Canada. Provinces and territories may further regulate the sale, storage, transportation, and disposal of pesticides, issue permits for them, and monitor their use. They may also set further conditions on the use of pesticides or allow municipalities to do so. For example, the province of Quebec restricted the use of some pesticides to decrease the potentially harmful effects on children and the environment.

What we found in 2003

2.5 We audited the issue of the Pest Management Regulatory Agency's re-evaluation of older pesticides in 1988, 1999, 2002, and 2003. In 1988 and 1999, we noted that older pesticides needed to be re-evaluated. In 2002, we indicated that the Agency was conducting re-evaluations of older pesticides but that progress was slow. In our 2003 audit, Chapter 1, Managing the Safety and Accessibility of Pesticides, we examined how the Agency was managing selected aspects of pesticide use in Canada. We found that the Pest Management Regulatory Agency

- had a sound, evolving framework for evaluating pesticides, but was not applying it consistently;
- was approving some pesticides based on inadequate information;
- was estimating risks of pesticide use based on some assumptions that were unrealistic or not tested;
- was not meeting the timelines it set for how quickly it evaluated new, possibly safer pesticides; and
- was still slow in re-evaluating older pesticides.

We also found that while the Canadian Food Inspection Agency was testing fresh fruits and vegetables for almost 270 active ingredients, it had identified more than 190 other active ingredients for which practical methods were not available for testing to determine whether the residues exceeded the limits set by the Pest Management Regulatory Agency.

Events since 2003

2.6 The new *Pest Control Products Act* came into force on 28 June 2006. The objective of the Act is to better protect Canadians and the environment from the risks of pesticide use. The new Act also requires that all pesticides be re-evaluated every 15 years against the most current health and environmental standards for use.

Focus of the audit

2.7 This status report assesses the Pest Management Regulatory Agency's progress in response to select findings and recommendations from our 2003 report. Issues were selected based on their current relevance and significance. We did not audit the Agency's progress in improving its compliance activities or in managing human resource issues. Nor did we audit other government departments' contributions

to developing water quality guidelines. The objective of this audit was to determine whether the Agency is making satisfactory progress in

- systematically and consistently applying its evaluation and re-evaluation policies and procedures;
- providing timely access to new, possibly safer pesticides; and
- meeting its target for re-evaluating older pesticides.

We also examined whether the Canadian Food Inspection Agency has made satisfactory progress in improving the number of active ingredients tested in fresh fruits and vegetables as part of its National Chemical Residue Monitoring Program. We examined the scope of testing that is taking place as part of the Program; we did not audit the Program's planning, sample collection activities, or public reporting.

2.8 More details on the audit objectives, scope, approach, and criteria are in **About the Audit** at the end of this chapter.

Observations

Evaluating new pesticides

Risk to human health or the environment—In determining whether a pesticide poses a risk to human health, the Agency examines such things as the capacity of the pesticide to cause cancer. For the environment, the Agency examines such things as what happens to fish if the pesticide gets into a water body.

2.9 Any pesticide sold in Canada must first be approved by the Pest Management Regulatory Agency. Any company wishing to manufacture or sell a pesticide in Canada must submit detailed information and scientific data to the Agency for evaluation of the active ingredient and end use product. The Agency determines whether the pesticide poses any **risks to human health or the environment** and whether it is effective for its intended use. If after the evaluation, the Agency determines that there are no unacceptable risks from using the pesticide, it will grant the pesticide registration for use in Canada.

2.10 In our 2003 audit, we reported that Agency evaluators occasionally skipped steps during their evaluation of pesticides—contrary to the Agency's own evaluation process (Exhibit 2.1). We also noted that some required data was not received from applicants or did not meet acceptable quality standards, and that assumptions for how pesticides were being used were not tested. We recommended that the Agency ensure data used for risk assessments is complete and reliable, assumptions are realistic and tested, and that evaluators follow the Agency's own evaluation policies and procedures systematically. The Agency agreed to reassess its procedures to ensure data is complete and reliable and that deviations from the norm are approved and documented. For this status report, we conducted an in-depth file review of a sample of new pesticides registered for use in Canada in

the 2005–06 fiscal year. We expected the Agency to have followed its own evaluation procedures and reviewed all required scientific studies meeting quality standards.

Exhibit 2.1 **Pesticides are evaluated using a nine-step process**

Submission of the application and data by the applicant
STEP #1 Verification of data by the Pest Management Regulatory Agency
Has all necessary information been provided?
STEPS #2 & #3 Screening of data and preliminary review by the Agency
Does data support claims for effectiveness? Does data meet chemistry requirements? Can the health and environmental risk be evaluated based on data submitted?
STEP #4 Scientific review and risk assessment by the Agency
Are the health and environmental risks acceptable? If the risks are unacceptable, can they be mitigated?
STEP #5 Proposed decision by the Agency
Should the pesticide be registered, rejected, or granted a conditional registration?
STEP #6 Preparation of the proposed decision about the submission
STEP #7 Public consultation on the proposed decision
STEP #8 Assessment of public comments
STEP #9 Pesticide label review and approval

Source: Adapted from the Pest Management Regulatory Agency

The Agency is systematically applying its procedures for evaluating new pesticides

2.11 Evaluation steps were carried out. In the sample of newly registered pesticides we reviewed for this audit, the Agency completed all the steps in its evaluation process. This enabled it to determine whether there were any unacceptable risks to human health or the environment from the use of the pesticide. When the Agency did not follow its evaluation process—for example, when deciding to shorten the review period—this deviation was reviewed and approved by senior management.

2.12 Studies used for risk assessments are checked for quality and reliability. The Agency requires applicants to provide a complete package of information on the pesticide that they want to register. The Agency's policy states that all scientific information submitted for review must be from a laboratory whose methods for testing are certified. This is intended to ensure the quality and validity of the data used to assess the human health and environmental risks of the pesticide.

2.13 In our 2003 audit, we reported that there were several examples where data submitted by applicants did not meet such standards. In the files we examined for newly registered pesticides during this follow-up audit, we noted that the Agency reviewed the complete data package. In some cases, we found that the Agency accepted and used data with no indication of whether it was from laboratories whose methods were certified. However, Agency scientists assessed and validated the quality of the data and documented their assessment in a data evaluation report. This report was then reviewed by other scientists, and the decision to accept the data for use during the risk assessment was approved by senior management (Exhibit 2.2).

2.14 The Agency is making progress on testing assumptions of how pesticides are used. When the Agency evaluates a pesticide it may make assumptions (such as how the pesticide is applied) to ensure that there are no unacceptable risks to human health or the environment. Testing these assumptions is important to help the Agency ensure that its assessments will protect human health and the environment from the pesticide's potential risks. Once assumptions have been validated, this information is used during the evaluation and re-evaluation of other pesticides.



Nozzles spraying pesticides on a golf course.

2.15 In our 2003 audit, we reported that Agency evaluators did not test the assumptions they used to mitigate the risks of the pesticide. We also found that the Agency assumed users followed label instructions when applying pesticides, even though some studies demonstrated this was not the case. This could, for example, result in

unsafe levels of pesticide application and cause health problems such as respiratory illness or skin irritation. We expected that since 2003, the Agency would have put in place mechanisms to verify that its assumptions are realistic and tested. We examined whether it has integrated the results of the assumption testing into its pesticide evaluations or re-evaluations.

2.16 We found that since 2003, the Agency has been working with other parts of Health Canada, Agriculture and Agri-Food Canada, the Canadian Food Inspection Agency, Environment Canada, Fisheries and Oceans Canada, and Natural Resources Canada to verify assumptions that can provide more realistic estimates for risk assessments. In June 2007, the Agency identified 10 priority areas that require research, including assumption testing. In the 2007–08 fiscal year, these departments plan to conduct 15 research projects, which will address some of the Agency's needs. For example, one research project will assess the effect of pesticides on wild Atlantic and Pacific salmon. As part of its compliance activities, the Agency is also testing its assumptions on the extent to which users comply with pesticide labels and directions as part of its inspection programs. This is an improvement from 2003 when limited research was being conducted to test assumptions.

2.17 The Agency is starting to integrate the results of its assumption testing into the evaluation of new pesticides and the re-evaluation of older pesticides. For example, the Agency verified its assumption about the percentage of crops treated with pesticides through data collected in farm surveys and polls. The results contributed to refining the Agency's health risk assessments, which estimates human dietary exposure to pesticides. The Agency now has a better understanding of the amount of pesticides applied to various crops and therefore how much pesticide residues humans are exposed to in their diet (Exhibit 2.2).

2.18 Industry will be required to provide pesticide sales information to the Agency. The Pest Management Regulatory Agency originally committed to having a database in place by 2001 to track annual sales of pesticides. This additional information would be used to help assess the risks of pesticides to human health and the environment. Such a database would also provide valuable information for testing assumptions about pesticide use by tracking sales. In addition, it would help the Agency better target its research, monitoring, and compliance activities. In 2003, we noted that Canada was the only Organisation for Economic Co-operation and Development country that had no such database in place. In 2006, we found that a database was put in place; however, it contained no data. In this audit, we found that regulations that came into force in October 2006 will require registrants to supply data by 1 June 2008.

Exhibit 2.2 Progress in addressing our recommendation on the strengthening of its evaluation process is satisfactory

Recommendation	Progress
To ensure that pesticides meet today's environmental and health standards, the Agency should continue to strengthen its pesticides evaluations. In particular, it should ensure that data are complete and reliable, ensure that assumptions are realistic and tested, and follow its own evaluation policies and procedures more systematically. (2003 Report of the Commissioner of the Environment and Sustainable Development, Chapter 1, paragraph 1.50)	Satisfactory

Satisfactory—Progress is satisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation was made.

Unsatisfactory—Progress is unsatisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation was made.

Not all temporary registrations of pesticides have been addressed

2.19 Under the 2006 *Pest Control Products Act*, pesticides are granted a "conditional registration" that is now valid for three years, instead of the previous "temporary registration" for a one-year period. If registrants do not submit all required data during this time, the Minister of Health may extend the expiry date to allow the applicant to provide the data or cancel the registration.

2.20 During the evaluation of a pesticide, the Agency may conclude that, even if the applicant has submitted all the data required for the Agency's health or environmental risk assessments, additional data may be required to confirm the results of its risk assessment. For example, the Agency may have uncertainties when extrapolating data from small scale field trials to actual pesticide use. The Agency therefore applies a "worst case scenario" assumption so that applicable safety measures can be put in place if needed. To have the safety measures removed, the applicant is required to provide data proving the worst case scenario does not apply. If the worst case scenario does apply, safety measures are kept in place to protect human health or the environment. In these cases, the Agency may approve a "conditional registration" to allow the temporary use of a new pesticide.

Registrant—a company or individual that holds the certificate of registration granted from the Pest Management Regulatory Agency to produce, sell, and/or use a pesticide in Canada.

2.21 During the time that a pesticide is "conditional," the **registrant** is expected to complete and submit any additional studies required to confirm the Agency's assessment of risk. Permission to use the pesticide is temporary; full registration is granted once these additional studies have been submitted and the Agency has reviewed and accepted them.

2.22 In our 2003 audit, we found that the Agency was relying heavily on temporary registrations and that some of the additional data requirements for these registrations were necessary to assess the health or environmental risks of the pesticide. For this status report, we examined the number of temporary registrations. We also expected that any pesticides that had received a conditional registration were not missing any data required to conduct the Agency's risk assessments.

2.23 We found that of all the new pesticides registered in the 2006–07 fiscal year, 13 percent were conditional. Of those that we examined, the additional data requested for full registration was not needed to conduct the human health or environmental risk assessments. We found only one pesticide granted a conditional registration that was missing a study required to evaluate its effect on the environment. Without this study, the Agency made a conservative assumption (that is, applied a worst case scenario) of how the pesticide would react in water and determined that there were no unacceptable risks. The assumption will be confirmed when the registrant submits the outstanding study.

2.24 We also found nine pesticides that have been "temporary" for between 10 and 20 years, and one for as long as 21 years—this cannot be considered temporary. The Agency indicated that, subsequent to the initial registration of these pesticides, it identified new conditions of registration and/or requested more data. More work needs to be done to address the number and length of some of these pesticides' conditional registrations. The Agency has indicated that it will monitor and use its authority under the new *Pest Control Products Act* to limit the length of conditional registrations (Exhibit 2.3).

Exhibit 2.3 **Progress in addressing our finding on the heavy use of temporary registrations is unsatisfactory**

Finding	Progress
A heavy use of temporary registrations was made by the Agency. For some of these temporary registrations, the missing information should have been included in the original application and was critical to the Agency's assessment of the health or environmental risk of use. (2003 Report of the Commissioner of the Environment and Sustainable Development, Chapter 1, see paragraph 1.37)	Unsatisfactory

Satisfactory—Progress is satisfactory, given the significance and complexity of the issue, and the time that has elapsed since the finding was made.

Unsatisfactory—Progress is unsatisfactory, given the significance and complexity of the issue, and the time that has elapsed since the finding was made.

Providing access to new pesticides

The Agency has programs in place to improve access to new pesticides

2.25 In 2003, we noted that farmers were demanding quicker access to new, more effective, and possibly safer pesticide products, as well as access to the same pesticides available for use by competitors in the United States. The gap in available pesticides was the result of the small Canadian market, Canadian regulatory requirements, and pesticide re-evaluation decisions that have restricted or removed pesticides from the Canadian market. As safe and effective alternative products are not always immediately available, evaluation delays can have serious consequences for farmers.

2.26 Since our last audit, the Pest Management Regulatory Agency has embarked on a number of initiatives, on its own and in partnership with other federal departments and other countries that are members of the Organisation for Economic Co-operation and Development, to improve access to pesticides in Canada. For example, the Agency has classified pesticides that are known to be less toxic as "lower risk," thus requiring less data for the risk assessment and accelerating the evaluation process (Exhibit 2.4). The Agency has increased joint reviews with other countries—6 were completed in 2003–04, 16 in 2006–07, and as of 1 June 2007, there were 16 under way. Joint reviews are possible since these other countries share similar standards for evaluating new pesticides.

Joint review—the evaluation of a pesticide application is shared between two or more countries.

Exhibit 2.4 Example of enabling access to a lower-risk pesticide—The mountain pine beetle epidemic

An epidemic of the mountain pine beetle in British Columbia has caused widespread destruction of the lodgepole pine trees on which the beetle feeds. The beetle is the size of a grain of rice and carries a fungus that kills the tree by clogging its pores. Verbenone, a lower-risk pesticide that received a temporary registration in 2006, sends a signal to beetles that the tree is infested and deters them from infecting it. Due to the high costs of applying this pesticide, it is used only in urban areas, campsites, and golf courses.



Source: www.bcforestinformation.com

The Agency reclassified Verbenone as lower-risk compared with conventional pesticides, noting that it is less toxic, occurs naturally, is effective at very low application rates, and dissipates rapidly in the environment. When evaluating lower-risk products, the Agency makes a decision more quickly because less data is needed to conduct the health and environmental risk assessment. The Agency stated that a flexible regulatory approach that promotes timely access to new lower-risk pesticides is important in instances such as the mountain pine beetle epidemic.

2.27 In 2003, we found that joint reviews had not resulted in the efficiency gains for pesticide evaluations, as the Agency had anticipated. In this audit however, we noted that the Agency is achieving efficiency gains in the amount of time it takes to evaluate a pesticide using joint reviews. Other benefits of joint reviews include

- registering new products simultaneously in both Canada and the United States, thus slowing the growth of the gap between pesticides available in the United States but not in Canada;
- making it easier to trade agricultural products between countries; and
- making scientific decisions regarding the use of a pesticide supported by more scientists involved in assessing and discussing the risks associated with its use.

New initiatives are increasing the availability of minor-use pesticides

2.28 Some pesticides are required by users in such small quantities that the anticipated sales volume is not considered sufficient for a manufacturer to register the pesticide in Canada. These minor-use pesticides can be particularly important for situations where few pest control options exist. In 2003, we noted that growers felt they were not getting access to needed minor-use pesticides. For this status report, we examined whether the availability of registered minor-use pesticides had improved since 2003.

2.29 We found that since our audit in 2003, the Agency has made it a priority to help improve access to new minor-use pesticides. We found that it better understands the priorities for registration of 137 pesticides currently available to growers in the United States that are not available to growers in Canada. If made available, most would be considered minor-use pesticides. The fact that US growers have more access to potentially lower-risk and more effective pesticides than Canadian growers puts Canadians at a competitive disadvantage. The Agency has received approval for $14 million, starting in the 2007–08 fiscal year, to evaluate priority pesticides and increase the availability of minor-use pesticides over the next four years.

2.30 In addition, we noted in 2003 that a new government program allocated $54.5 million over six years to Agriculture and Agri-Food Canada to conduct research on minor-use pesticides. At that time, Agriculture and Agri-Food Canada began holding an annual conference with growers with the goal of identifying priority minor-use pesticides needed for crops across Canada. Once this list is compiled each year, Agriculture and Agri-Food Canada conducts the necessary research for

the Pest Management Regulatory Agency to assess the human health and environmental risks of the pesticide. This research can include trials to test whether the pesticide actually kills, deters, or repels the pest.

2.31 Between 2003 and April 2007, Agriculture and Agri-Food Canada reported that it had started 385 research projects and submitted 79 completed projects to the Pest Management Regulatory Agency. Of those submitted, 40 minor-use pesticides have been registered by the Pest Management Regulatory Agency. Agriculture and Agri-Food Canada has stated that it takes approximately three years to complete the research and submit the data to the Pest Management Regulatory Agency. The Pest Management Regulatory Agency then takes almost one year to evaluate and possibly register the pesticide for use (Exhibit 2.5).

2.32 While the program was slow to get going, grower groups have indicated to us that they are generally satisfied with the program and that it is starting to achieve results; however, they would like to see faster approval of pesticides currently available only to US growers. Agriculture and Agri-Food Canada has informed us that it is conducting consultations and developing a general policy document that will determine future directions for agricultural policy and programs, including minor use work.

Exhibit 2.5 Registration of pesticides can be extended if no alternatives exist

The Pest Management Regulatory Agency re-evaluated the insecticide Terbufos in 2003 and decided that all uses should be phased-out because of unacceptable risks to wildlife. Based on discussions with stakeholders and in accordance with the *Pest Control Products Act*, the Agency accepted continued registration for use on one crop until December 2006 because there was no alternative available to growers. Based on the limited use of Terbufos for this one crop, the Agency determined that the environmental risks were not a concern. The Agency indicated it would revisit the December 2006 timeline and has since extended its use until 2009.



Terbufos was used on canola to control the flea beetle and cabbage maggot.

Source: Pest Management Regulatory Agency

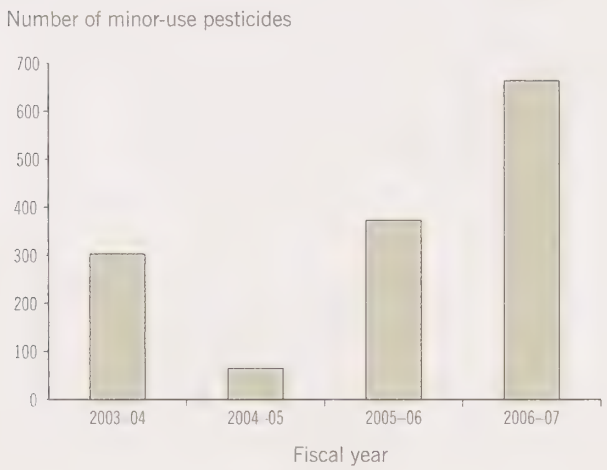
According to the Act, the Agency may delay implementation of the date by which the unacceptable pesticide must be removed from the market. Agriculture and Agri-Food Canada began research on an alternative to Terbufos in 2007. Since it takes the department an average of three years to conduct trials and the Agency approximately one year to evaluate a new minor-use pesticide, an alternative is not likely to be available on the market until 2011, unless a company submits a new pesticide to the Agency for evaluation.

2.33 With the combined efforts of the above-noted programs (paragraphs 2.28–2.32), the Pest Management Regulatory Agency registered 663 minor-use pesticides in the 2006–07 fiscal year (Exhibit 2.6). Taking into account these recent efforts, the Agency has made satisfactory progress since 2003 to improve access to pesticides (Exhibit 2.7).

The time it takes to evaluate new and minor-use pesticides has improved

2.34 The Pest Management Regulatory Agency set timelines for itself to complete each step in its evaluation process (Exhibit 2.1). These timelines can range from 400 to almost 1,000 days, depending on the type of pesticide and its intended use. In 2003, we reported that the Agency was not consistently meeting the timelines it set for evaluating applications to register new or minor-use pesticides in Canada.

Exhibit 2.6 Between 2003 and 2007, the registration of minor-use pesticides has increased



Source: Pest Management Regulatory Agency

Exhibit 2.7 Progress in addressing our finding that growers were not provided timely access to needed pesticides is satisfactory

Finding	Progress
Growers were not being provided with adequate access to minor-use pesticides. (2003 Report of the Commissioner of the Environment and Sustainable Development, Chapter 1, see paragraph 1.73)	Satisfactory

Satisfactory—Progress is satisfactory, given the significance and complexity of the issue, and the time that has elapsed since the finding was made.

Unsatisfactory—Progress is unsatisfactory, given the significance and complexity of the issue, and the time that has elapsed since the finding was made.

2.35 In this audit, we examined all 40 new pesticide applications registered in the 2006–07 fiscal year, from the time their evaluation began until the pesticide label was approved. Based on parliamentary and public consultation, the Agency publicly reports on the time it takes to evaluate a new pesticide for four steps of the evaluation process—the preliminary review, the scientific review and risk assessment, the decision on the registration, and the preparation of documents for public consultation (Exhibit 2.1). When we assessed the time it takes the Agency to complete all nine steps of the evaluation process, we found that the Agency met its timelines 68 percent of the time compared with 62 percent in 2002–03. As well, when it exceeded the timelines, it did so by an average of 17 days, compared with 153 days in 2002–03. The timelines were exceeded at the last step where applicants were required to make corrections to their pesticide labels, which negatively impacted the Agency's performance.

2.36 When evaluating minor-use pesticides, we found that the Agency took an average time of about six months in 2003–04 and in 2006–07. In this audit, we noted that the Agency met its timelines 67 percent of the time. When it exceeded its timelines, it did so by an average of 24 days, compared with an average of 107 days in 2003–04. By reducing the length of time it exceeds its timelines, the Agency is providing more timely access to minor-use pesticides (Exhibit 2.8).

Exhibit 2.8 Progress in addressing our finding that the Agency was not meeting its performance timelines is satisfactory

Finding	Progress
The Agency was not meeting its performance timelines for how quickly it evaluates new and minor-use pesticides for registration in Canada. (2003 Report of the Commissioner of the Environment and Sustainable Development, Chapter 1, see paragraphs 1.67, 1.68, and 1.74)	Satisfactory

Satisfactory—Progress is satisfactory, given the significance and complexity of the issue, and the time that has elapsed since the finding was made.

Unsatisfactory—Progress is unsatisfactory, given the significance and complexity of the issue, and the time that has elapsed since the finding was made.

Re-evaluating older pesticides

2.37 The Pest Management Regulatory Agency committed in 2001 to re-evaluate 405 active ingredients in pesticides that were registered in Canada before new standards for use were established in 1995. These standards require the Agency to consider, among other issues, impacts to bystanders, reproductive impacts on later generations, and the greater susceptibility of children to the pesticides. In 2005, the number

of active ingredients to be re-evaluated decreased to 401 as four are disinfectants that are no longer regulated under the *Pest Control Products Act*; they are now addressed by the *Food and Drugs Act*.

2.38 This is the fifth time that we have audited the issue of re-evaluation of older pesticides. Our past audits noted serious deficiencies in the Agency's progress to re-evaluate older pesticides. In 2003, we recommended that the Agency speed up its re-evaluations and develop guidelines to determine how quickly a pesticide with unacceptable risk should be taken off the market. The Agency agreed with our recommendations and recognized that it needed to accelerate the re-evaluation of older pesticides. For this status report, we expected that the Agency would have

- made significant progress in completing the re-evaluation of older pesticides;
- put in place an action plan containing detailed time and cost estimates to ensure it will meet its target to complete the re-evaluations by the 2008–09 fiscal year;
- demonstrated that all pertinent risks to health and the environment have been assessed during re-evaluations; and
- developed guidelines for determining how quickly pesticides with unacceptable risks should be removed from the market.

While the Agency has made progress, important components of the re-evaluation process are not in place

2.39 **The Agency has increased the number of active ingredients re-evaluated.** As of March 2007, the Agency had fully completed the re-evaluation of 90 active ingredients. An additional 58 active ingredients have a published regulatory proposal and their re-evaluations are in the process of being completed. Another 76 active ingredients did not need a full re-evaluation because they were withdrawn by the registrant. This is an improvement from 2003 when only 6 had been fully re-evaluated. One of the challenges to re-evaluating older pesticides is the length of time it takes to review new data. Re-evaluations of active ingredients using assessments from the United States to speed up the decision take an average of almost two years, while re-evaluations of some of the more widely used active ingredients such as 2,4-D have taken more than four years. The Agency stated that it has delayed the re-evaluation of less complex active ingredients until the end of the process, and that these reviews should be simpler and faster. However, the Agency still has to fully

complete 235 active ingredient re-evaluations in two years when it took six years to fully complete 166 (Exhibit 2.9).

2.40 An example of how lengthy this process can be is the re-evaluations of seven of the most commonly used active ingredients in lawn care pesticides (diazinon, carbaryl, malathion, 2,4-D, mecoprop, dicamba, and MCPA). In 2000, the Minister of Health announced an initiative to re-evaluate the lawn and turf uses of these seven active ingredients. The re-evaluations were to have originally been completed in 2001 (Exhibit 2.10). This target has not been met; at the time of our audit, only three re-evaluations had been fully completed. The Agency has published proposed decisions for three others, which it plans to finalize once the re-evaluation of all remaining uses is completed. The review of carbaryl is ongoing. The Agency stated that delays in re-evaluating these active ingredients occurred because the risk assessments were complex and involved many registrants, and it took longer to go through the large amounts of data than was originally anticipated.

Exhibit 2.9 The Agency has increased the number of re-evaluations of active ingredients completed since 2003

	Fully re-evaluated active ingredients	Re-evaluation decisions in the process of being completed	Withdrawn active ingredients
2003 Audit	6	23	44
2008 Audit	90	58	76

Source: Pest Management Regulatory Agency

Exhibit 2.10 The re-evaluation of 2,4-D took longer than anticipated

The active ingredient 2,4-D was first registered for use in Canada in 1946. It is the most commonly used active ingredient in pesticides to control and suppress weeds and to help produce food in Canada. In almost 20 years, the Agency stated that it has received over 300 applications to register different products containing 2,4-D. It has re-evaluated the active ingredient numerous times and has requested changes through the years, including new manufacturing processes, label improvements to increase safety, and the addition of new uses. The latest re-evaluation of lawn and turf uses of 2,4-D began in 2000, and a proposed decision was published in 2006. However, the final decision was supposed to be fully completed in 2001. Agency officials now expect to fully complete the re-evaluation of 2,4-D in 2008.

The Agency found that the risks to human health and the environment associated with the use of 2,4-D were acceptable and the active ingredient could continue to be used with certain mitigation measures. We noted that the Agency's re-evaluation of 2,4-D included the review of hundreds of scientific and academic studies, international decisions on the chemical, and scientific review panels.

2.41 The target date for completing the re-evaluation of older pesticides continues to change. Since the re-evaluation program was established, the Agency has twice received additional funds to re-evaluate older pesticides, and has extended the target date for completing the re-evaluation three times; first to 2006, then 2008–09, and now 2009–10. The Agency received its latest additional funding as part of the Chemical Management Plan initiative (see Chapter 1, Substances Assessed Under the *Canadian Environmental Protection Act, 1999*) to complete the re-evaluation of the remaining older pesticides by the 2009–10 fiscal year.

2.42 When the Agency committed to re-evaluating older pesticides to speed up its own process, it decided to rely heavily on assessments already completed in the United States. The Agency says that its re-evaluation target changed because the US target changed.

2.43 The Agency has no detailed action plan to guide its re-evaluations. The Agency has produced general guidance on the classes of active ingredients under re-evaluation of highest concern. However, it decided not to develop a priority list ranking the 401 older pesticides according to their level of risk. Therefore, it was not possible to assess whether older pesticides were being addressed in order of priority according to their level of risk. In addition, there is no detailed action plan with timelines to address these active ingredients given the resources available or a contingency plan in the event the United States falters on its progress. While some elements of an action plan do exist, such as annual work plans, they lack information such as detailed time and cost estimates to ensure it will meet its target to complete the re-evaluations on time.

2.44 The Agency is systematically following its re-evaluation procedure. In 2003, we found that the risk assessment process used to re-evaluate older active ingredients against current health and environmental standards is similar to that followed for new pesticides before they are sold or used in Canada. For this audit, we expected that the Agency is systematically and consistently applying its re-evaluation procedure. When the Agency uses assessments completed in the United States for its own re-evaluation decisions, it relies on the Environmental Protection Agency to ensure that data used in its risk assessment meets quality standards.

2.45 During our file review of 20 re-evaluation decisions made between 2003 and 2006, we found that the Agency consistently followed its procedures. This enabled it to determine whether there were any unacceptable risks to human health and the environment

from continued use of the active ingredient. When risks were unacceptable, the Agency required changes to labels to mitigate these risks, or required phase-out of pesticides containing the active ingredient.

2.46 The Agency's progress in addressing our 2003 recommendation and finding is unsatisfactory since

- it still has 235 active ingredients to fully re-evaluate in a two-year period when it took six years to complete 166,
- it never developed a detailed action plan with timelines to guide its progress, and
- its target for completion has changed three times. (Exhibit 2.11)

Exhibit 2.11 Progress in addressing our finding and recommendation that the Agency is not using basic tools and should speed up re-evaluations is unsatisfactory

Finding and Recommendation	Progress
Finding. The Agency is not using basic management tools to guide its re-evaluations, including a plan containing detailed time and cost estimates by which to gauge the Agency's level of effort and progress, or a priority listing of pesticides to be re-evaluated. The Agency is also working with incomplete information during the re-evaluation of older pesticides. (2003 Report of the Commissioner of the Environment and Sustainable Development, Chapter 1, see paragraphs 1.58 and 1.61)	Unsatisfactory
Recommendation. To reduce the risks of older pesticides, the Agency should speed up its re-evaluations. It should demonstrate how it will meet its re-evaluation deadlines. (2003 Report of the Commissioner of the Environment and Sustainable Development, Chapter 1, see paragraph 1.62)	Unsatisfactory

Satisfactory—Progress is satisfactory, given the significance and complexity of the issue, and the time that has elapsed since the finding or recommendation were made.

Unsatisfactory—Progress is unsatisfactory, given the significance and complexity of the issue, and the time that has elapsed since the finding or recommendation were made.

The Agency has developed guidelines for removing older unacceptable pesticides from the market

2.47 In 2003, we recommended that the Agency develop and implement guidelines for determining how quickly pesticides with unacceptable risks should be removed from the market after re-evaluation. The Agency agreed and committed to developing these guidelines by March 2004.

2.48 During the course of our audit, the Agency finalized its guidelines for determining how quickly a pesticide that does not meet

current health or environmental standards for use should be taken off the Canadian market. These were put in place in March 2006. Given that these guidelines are recent, we were unable to verify the Agency's implementation of them; however, we consider progress to date satisfactory (Exhibit 2.12).

Exhibit 2.12 Progress made in addressing our recommendation that the Agency develop guidelines for removing pesticides with unacceptable risks from the market is satisfactory

Recommendation	Progress
To better manage the risks associated with older pesticides, the Agency should develop and implement guidelines for determining how quickly pesticides with unacceptable risks should be removed from the market. (2003 Report of the Commissioner of the Environment and Sustainable Development, Chapter 1, see paragraph 1.63)	Satisfactory

Satisfactory—Progress is satisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation was made.

Unsatisfactory—Progress is unsatisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation was made.

Testing for pesticides in fresh fruits and vegetables



The Canadian Food Inspection Agency tests fresh fruits and vegetables for residues of active ingredients.

More active ingredients are being monitored

2.49 Canada's Food Guide recommends that Canadians eat between 4 and 10 servings of fruits and vegetables on a daily basis, depending on one's age. When trying to fulfill these basic nutritional requirements, Canadians need assurance that the food they eat is safe. By developing economical test methods, the Canadian Food Inspection Agency can verify whether the residues of active ingredients used in pesticides are present in fresh fruits and vegetables, and if they are present, whether they are within acceptable limits.

2.50 As part of its National Chemical Residue Monitoring Program, the Canadian Food Inspection Agency uses a risk-based approach to test fresh fruits and vegetables, as well as other commodities such as meat, eggs, and dairy products, for the presence of chemicals, such as active ingredients used in pesticides, veterinary drugs, and environmental pollutants. With respect to fresh fruits and vegetables, the Program focuses on the federally registered sector, that is, fresh produce that is imported or intended for export or inter-provincial trade.

2.51 In 2003, we noted that the Canadian Food Inspection Agency tested fresh fruits and vegetables for residues of 269 different active ingredients. For this status report, we expected the Agency to have expanded the scope of its residue testing program.

2.52 We found that the Canadian Food Inspection Agency is now testing for over 300 residues. This includes some of the 190 active ingredients identified in 2003 for which practical testing methods were not available. The Agency is also developing a new test method that could potentially cover more than 140 additional residues.

2.53 The Canadian Food Inspection Agency has more information on which active ingredients are not covered by its residue testing program. This includes newly registered active ingredients in Canada, as well as those that may be used in other countries. The Canadian Food Inspection Agency is in the early stages of reviewing these active ingredients to identify priorities for developing residue testing methods. The priorities are based on their toxicity and their potential for human exposure to them. The Canadian Food Inspection Agency has indicated that it will share and discuss the results of its review with the Pest Management Regulatory Agency. It now needs to develop a work plan with timelines for completing this review (Exhibit 2.13).

Exhibit 2.13 **Progress in addressing our finding regarding the scope of the Canadian Food Inspection Agency's testing program is satisfactory**

Finding	Progress
More than 190 active ingredients used in pesticides were not included in the Canadian Food Inspection Agency's methods for the testing of active ingredient residues in fresh fruits and vegetables. (2003 Report of the Commissioner of the Environment and Sustainable Development, Chapter 1, see paragraph 1.91)	Satisfactory

Satisfactory—Progress is satisfactory, given the significance and complexity of the issue, and the time that has elapsed since the finding was made.

Unsatisfactory—Progress is unsatisfactory, given the significance and complexity of the issue, and the time that has elapsed since the finding was made.

Conclusion

2.54 The government's progress in selected aspects of managing the safety and accessibility of pesticides since our last audit in 2003 is satisfactory.

2.55 We found that the Pest Management Regulatory Agency is following all of the steps in its evaluation process for new pesticide products. It is also testing its assumptions, ensuring adequate information is submitted by applicants for review, and checking the quality of data used for its risk assessments. The Agency has also initiated a number of programs to improve growers' access to new,

possibly safer pesticides. It has also developed programs that assign priority to making minor-use pesticides (those used in small quantities or on crops where few pest control options exist) available in Canada. However, pesticides registered as conditional are not being addressed—nine of these pesticides have been registered for 10 years or more. This can no longer be considered temporary.

2.56 To manage the risks associated with other pesticides, the Pest Management Regulatory Agency is consistently applying its procedures to re-evaluate the 401 active ingredients that were registered before the implementation of new standards in 1995. The number of active ingredients re-evaluated to date has increased since 2003, but many more await completion. Since the initiative began, the Agency has changed its target date for completion three times, and has never developed a detailed action plan to meet its timelines.

2.57 The Canadian Food Inspection Agency has increased the number of active ingredients included in its residue testing activities from 269 to over 300. It also has a better understanding of the active ingredients that are not included in its residue testing program. The Canadian Food Inspection Agency is in the early stages of assessing these active ingredients to identify priorities for developing residue testing methods; a work plan with timelines for completing this risk assessment process is needed.

About the Audit

Objectives

Our overall audit objective was to determine whether the Pest Management Regulatory Agency and the Canadian Food Inspection Agency have made satisfactory progress implementing key recommendations and addressing select findings from our 2003 Report on Managing the Safety and Accessibility of Pesticides. Our audit work included four sub-objectives, to which we applied specific criteria derived from our 2003 audit. Three of these sub-objectives were to determine whether the Pest Management Regulatory Agency has made satisfactory progress in

- ensuring pesticides meet today's health and environmental standards,
- improving timely access to pesticides, and
- managing the risks associated with older pesticides.

The last sub-objective was to determine whether the Canadian Food Inspection Agency has made satisfactory progress in improving its residue testing program for pesticides in fresh fruits and vegetables.

Scope and approach

This follow-up audit examined selected issues from the 2003 audit, Chapter 1, Managing the Safety and Accessibility of Pesticides. Issues were selected from the previous audit based on their current level of relevance and significance. These issues included the evaluation of new pesticides, timely access to new pesticides, the re-evaluation of older pesticides, and testing methods for residues of active ingredients on fresh fruits and vegetables. We did not audit the Agency's progress in improving its compliance activities or in managing human resource issues. Nor did we audit other government departments' contributions to developing water quality guidelines for pesticides.

We interviewed over 40 people from outside the federal government and inside the departments and agencies involved in pesticide management. These included senior managers and other scientific staff from the Pest Management Regulatory Agency, and other stakeholders. Stakeholders provided input on access to needed pesticides. Departmental officials provided information that contributed to understanding the Agency's policies and procedures, as well as any changes since our 2003 audit.

As a basis for auditing the process used for the evaluation of new pesticides, we selected a representative sample of 20 pesticides from a population of 57 pesticides evaluated and registered by the Pest Management Regulatory Agency in the 2005–06 fiscal year. Sample size was based on a desired confidence interval of 10 percent, and a desired confidence level of 90 percent. Evaluation and registration procedures were assessed through an examination of working documents, files, and electronic data from the pesticide sample. To assess re-evaluation procedures, pesticides were divided into two risk groups based on use (low and high) for sampling purposes. As a result of this sampling, all 6 pesticides from the high use group were examined because they represented those most widely used in Canada. In addition, a sample of 14 pesticides was selected from a population of 87 lower use pesticides. For the sample of low use files, sample size was based on a desired confidence interval of 10 percent, and a desired confidence level of 70 percent. A lower confidence level was chosen because the files were lower risk based on use.

We interviewed senior managers from the Canadian Food Inspection Agency and reviewed documentation relevant to their National Chemical Residue Monitoring Program. We examined the scope of testing that is taking place as part of the Program; we did not audit the Program's planning, sample collection activities, or public reporting.

Criteria

The criteria for this audit were derived from recommendations and findings in our 2003 report on Managing the Safety and Accessibility of Pesticides.

For this follow-up audit, we expected the Pest Management Regulatory Agency to

- be systematically and consistently applying its evaluation and re-evaluation procedures;
- have put in place mechanisms to ensure that data used for evaluation and re-evaluation are complete and meet quality standards;
- have put in place mechanisms to ensure that assumptions are realistic and tested;
- be consistently meeting its performance timelines for pesticide registration;
- be providing Canadian growers with access to minor-use pesticides;
- be increasing the efficiency of the registration process through joint reviews with the United States Environmental Protection Agency;
- be on track to meet its target to re-evaluate older pesticides; and
- have developed and implemented guidelines to determine how quickly pesticides with unacceptable risks should be removed from the market.

We also expected the Canadian Food Inspection Agency to have improved its program testing for residues of active ingredients in fresh fruits and vegetables by increasing the number of active ingredients it tests for.

Audit work completed

Audit work for this chapter was substantially completed on 30 June 2007.

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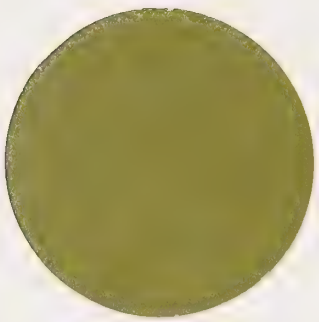
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MARCH

Chemicals Management

Chapter 3
Federal Contaminated Sites

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Chapter

3

Federal Contaminated Sites

All of the audit work in this chapter was conducted in accordance with the standards for assurance engagements set by The Canadian Institute of Chartered Accountants. While the Office adopts these standards as the minimum requirement for our audits, we also draw upon the standards and practices of other disciplines.

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Chemicals Management
Federal Contaminated Sites

Main Points

What we examined

As of October 2007, the federal government had identified about 17,800 sites under its responsibility that it knows or suspects are contaminated by substances, including petroleum products, heavy metals, and chemicals. The known sites have been contaminated by the federal government's regular operations, by tenants on its lands, and by others, during decades of use in the absence of today's environmental standards. The federal government has also assumed responsibility for contaminated sites such as abandoned mines North of 60°.

In 2002 we reported that 13 years after it began to tackle contaminated sites, the federal government did not know how many sites it had, the health and environmental risks they represented, or the likely cost of cleaning them up. Nor was it providing central leadership and an action plan for dealing with the higher-risk sites.

For this status report, we looked at the progress made since 2002 by four departments in dealing with contaminated sites under their responsibility, which together account for approximately 89 percent of the federal government's known and suspected contaminated sites. We also looked at whether stronger central leadership has been provided to deal with (including assessing, risk managing, or cleaning up) priority sites.

Why it's important

Unless they are managed properly, contaminated sites can negatively impact surrounding water, soil, and air, threatening human health and the environment. They also take valuable land out of productive use and can jeopardize the way of life of those who live off the land.

What we found

- The government has made satisfactory progress in managing its contaminated sites. The government initially allocated approximately $1.5 billion over five years as a first instalment of its $3.5 billion budgetary announcement to manage priority contaminated sites. It has also developed the Federal Contaminated Sites Action Plan with the objectives of effectively eliminating the financial liability associated with its contaminated sites by 2020 and reducing the risks to human health and the environment. It has determined that

contaminated sites under its responsibility represent a liability of about $3.1 billion (this excludes approximately $2.9 billion to decommission nuclear facilities).

- The four departments we audited are putting significant effort into managing their contaminated sites. They have remediated about 340 sites, and about 480 others are undergoing remediation. All four departments developed management plans. These plans include some time-bound commitments for dealing with their contaminated sites in order to meet the program's objective of reducing the risk they pose to human health and the environment. During our audit, the Treasury Board of Canada Secretariat issued additional guidance to departments to help ensure that their planned actions are aligned with and will contribute to the federal objective of effectively eliminating the financial liability for known sites by 2020.
- The government found that approximately 66 percent of known contaminated sites under federal responsibility are contaminated by petroleum products. Regulations requiring federal departments to keep an inventory of their petroleum storage tanks were put in place in 1997 but had significant gaps and were not always followed. New regulations requiring departments to take action on their petroleum storage tanks were proposed in 2007—four years later than promised. Although the proposed Regulations will require tanks found to be leaking to be withdrawn from service immediately, their full effect will not come into force up to four years after the Regulations are put in place. Tanks considered to be at high risk of leaking could remain in service until then.

Introduction

Contaminated sites—Sites where substances occur in concentrations higher than background levels and are likely to pose a hazard (immediate or long-term) to human health or the environment, or sites where concentrations exceed levels specified in policies and regulations.

Source: Contaminated Sites Management Working Group

3.1 As of October 2007, the federal government had identified approximately 17,800 confirmed or suspected contaminated sites that it has to manage. Examples of these sites include

- abandoned mines in the North of 60° (mines that are north of 60 degrees North latitude),
- areas that surround leaking petroleum storage tanks,
- airports,
- government laboratories,
- harbours and ports,
- landfills,
- light stations,
- military sites and training facilities, and
- Reserve lands.

3.2 Unless these sites are managed properly, contamination from these sites can spread. The surrounding water, soil, and air can become contaminated, threatening human health and the environment. Contamination also takes valuable land and water out of productive use. Many federal sites became contaminated by substances, such as petroleum products, heavy metals, and chemicals, as a result of the regular operations of the federal government, tenants on federal lands, and others—during decades of use in the absence of today's environmental standards.

3.3 In 2007, the federal government estimated that contaminated sites under its responsibility represent a financial liability of about $3.1 billion (this excludes approximately $2.9 billion to decommission nuclear facilities, which we did not cover in this audit).

What we found in 2002

3.4 In our 2002 Report of the Commissioner of the Environment and Sustainable Development (CESD), Chapter 2, we noted that the federal government had failed to adequately address the issue of federal contaminated sites. Thirteen years had passed since it had started to tackle this issue, and the federal government did not

- know how many contaminated sites it had;
- know the likely cost of cleaning up or managing the sites;
- have the worst sites ranked according to level of risk;

- have long-term, stable funding to manage the problem effectively; or
- have firm central leadership, including an action plan to deal with the higher-risk sites in a timely manner.

3.5 These findings were consistent with our audits of federal contaminated sites in 1995 and 1996. In addition, in our 1997 and 1998 follow-up audits, we reported that the government had made only limited progress in implementing our recommendations.

Events since 2002

3.6 Since 2002, the federal government has made budget announcements to deal with (including assessing, **remediating**, or **risk managing**) contaminated sites under its responsibility. In its 2004 Budget, the government announced $3.5 billion to deal with contaminated sites that pose a risk to human health and the environment. This built on the announcement that was made in the 2003 Budget, which stated that the government intended to accelerate action on federal contaminated sites and included a funding commitment of $175 million over two years.

Remediate—Improve a contaminated site to prevent, minimize, or mitigate damage to human health or the environment. Remediation involves developing and applying a planned approach that removes, destroys, contains, or otherwise reduces the availability of contaminants to have an impact

Source: Contaminated Sites Management Working Group

3.7 Key goals for the government are to reduce the risks to human health and the environment from these sites and to effectively eliminate its financial liability for known federal contaminated sites by 2020.

Risk manage— Select and implement a strategy to control risk, then monitor and evaluate the effectiveness of that strategy. Risk management may include direct remedial actions or other strategies that reduce the probability, intensity, frequency, or duration of the exposure to contamination.

Source: Contaminated Sites Management Working Group

3.8 In 2002, we stated that it was important for the federal government to decide on what role it was going to play at the Sydney Tar Ponds and, if appropriate, make long-term stable funding commitments. In 2004, the Government of Canada and the province of Nova Scotia signed a $400-million agreement to remediate the Sydney Tar Ponds and Coke Ovens sites over a 10-year period ending in 2014. The federal government committed up to $280 million. The contaminated sediments will be treated on site, using a process known as solidification and stabilization that involves mixing the sediments with hardening agents like cement powder. To date, no decisions have been made about a future use for this site.

Focus of the audit

3.9 For this status report, we assessed the progress that four departments—Fisheries and Oceans Canada, Indian and Northern Affairs Canada, National Defence, and Transport Canada—made in addressing select findings and recommendations from our 2002 CESD Report. These four departments (subsequently referred to as "custodial departments") were selected for examination, because they are collectively responsible for approximately 89 percent of the

contaminated sites under federal responsibility (excluding the decommissioning of nuclear facilities).

3.10 We assessed what Environment Canada and the Treasury Board of Canada Secretariat did to provide central leadership in dealing with priority contaminated sites, and what the federal government did to determine and report the costs of dealing with these sites. We also assessed progress made by Environment Canada to develop regulations for preventing contamination caused by spills or leaks from petroleum storage tanks.

3.11 More details on the audit objectives, scope, approach, and criteria are in **About the Audit** at the end of this chapter.

Observations

Central leadership

3.12 In our 2002 Commissioner of the Environment and Sustainable Development (CESD) Report, we found that a number of departments and agencies said that the lack of dedicated funds over the long term was a constraint to dealing with contaminated sites in a timely manner. In addition, some departments allocated some of their own operational funding to remediate and/or risk manage their contaminated sites, regardless of the level of risk. Others either had no internal funds or limited internal funds that they could dedicate to deal with sites known to be higher risk.

3.13 We recommended that the Treasury Board of Canada Secretariat and Environment Canada provide central leadership to rank the higher-risk sites, on a government-wide basis, and ensure a source of long-term stable funding. They did not fully agree with our recommendation and stated that federal departments and agencies are accountable for managing contaminated sites for which they are responsible within existing resource levels and in accordance with approved policies.

Federal government has allocated additional funds to deal with priority contaminated sites

3.14 In 2005, the federal government initially allocated about $1.5 billion, over five years, to deal with its contaminated sites, as a first instalment of its $3.5 billion budget announcement. The government established the Federal Contaminated Sites Action Plan, under the joint direction of Environment Canada and the Treasury Board of Canada Secretariat. This plan is used to allocate additional funding to address the legacy of federal contaminated sites,

based on the risk they pose to human health and the environment. We found that a government-wide risk evaluation and ranking methodology was developed to target the priority projects for action.

3.15 Each year, Environment Canada compiles the results of risk evaluations that are completed by departments and agencies. It also presents funding options to an assistant deputy minister steering committee, which is co-chaired by Environment Canada and the Treasury Board of Canada Secretariat. Among other activities, the steering committee sets project priorities, monitors progress, and makes recommendations to the Treasury Board on funding projects that deal with federal contaminated sites. The Treasury Board then reviews recommendations and administers the funding. A list of priority projects is updated annually to reflect progress in dealing with known contaminated sites and in investigating suspected sites. Exhibit 3.1 includes examples of high-priority federal contaminated sites that are receiving additional funding.

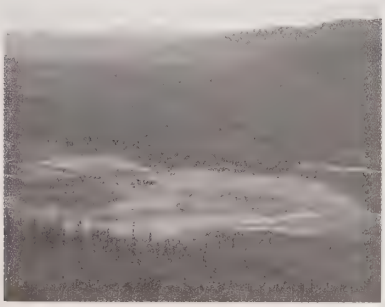
3.16 The government-wide funding allocated to manage contaminated sites is in addition to what individual federal departments were already spending. In the 2003–04 and 2004–05 fiscal years—of the Federal Contaminated Sites Accelerated Action Plan (the program that preceded the Federal Contaminated Sites Action Plan)—Environment Canada reported that $145.1 million in additional funds were allocated to deal with 77 priority contaminated sites, and $7.57 million were allocated to assess 646 suspected and known sites (Exhibit 3.2).

3.17 The four custodial departments stated that a barrier to dealing with some contaminated sites, especially North of 60°, is limited access—due to remote locations and short working seasons. Departments reported to us and to the Treasury Board of Canada Secretariat that, sometimes, additional costs and work delays occur when additional funding is approved late in a given fiscal year. The government needs to ensure that funding is in place so contracts can be awarded and work can proceed in a timely manner.

Guidance to ensure contaminated sites receive an appropriate level of action is still outstanding

3.18 The Treasury Board's Policy on Management of Real Property (updated in 2006) requires that known and suspected contaminated sites be assessed and classified. The Policy also requires that risk management principles be applied to determine the most appropriate and cost-effective course of action for each site.

Exhibit 3.1 **Examples of high-priority federal contaminated sites that are receiving additional funding**



Source: Yukon Territorial Government

Property name: United Keno Hill Mine

Custodian: Indian and Northern Affairs Canada

Location: Yukon

Description: Former silver and lead mine

Contaminants: Polychlorinated biphenyls (PCBs), zinc, arsenic, cadmium, and lead

Status: Under remediation



Source: Biogénie SRDC Inc.

Property name: CAM-F (Sarcpa Lake)

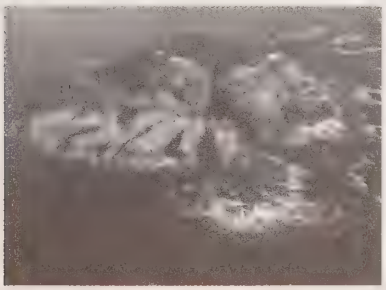
Custodian: Indian and Northern Affairs Canada

Location: Nunavut

Description: Former Distant Early Warning (DEW) line station

Contaminants: Debris, abandoned drums, PCBs, zinc, cadmium, lead, and copper

Status: Under remediation



Source: Fisheries and Oceans Canada

Property name: McInnes Island

Custodian: Fisheries and Oceans Canada

Location: British Columbia

Description: 1 of 27 staffed light stations throughout the province

Contaminants: Lead, arsenic, and petroleum hydrocarbons

Status: Under risk management



Source: Indian and Northern Affairs Canada

Property name: Barrenlands (Former Department of Transport site)

Custodian: Indian and Northern Affairs Canada

Location: Manitoba

Description: Bulk fuel storage and equipment maintenance site

Contaminants: Petroleum hydrocarbons

Status: Under remediation

Exhibit 3.1 Examples of high-priority federal contaminated sites that are receiving additional funding (continued)



Source: Fisheries and Oceans Canada

Property name: Belleville Small Craft Harbour (includes Zwick's Island East and Meyers Pier Park contaminated sites)

Custodian: Fisheries and Oceans Canada

Location: Ontario

Description: Former commercial harbour used for coal and fuel storage with former landfill sites

Contaminants: Petroleum hydrocarbons, iron, manganese, polycyclic aromatic hydrocarbons (PAHs), ammonia, and heavy metals

Status: Under risk management



Source: National Defence

Property name: Valcartier

Custodian: National Defence

Location: Quebec

Description: Contaminated aquifer

Contaminants: Trichloroethylene

Status: Under remediation and risk management



Source: National Defence

Property name: 14 Wing Greenwood (Northside Lower Zeke's Brook)

Custodian: National Defence

Location: Nova Scotia

Description: Largest air force base in Eastern Canada

Contaminants: Metals, PAHs, and petroleum hydrocarbons

Status: Under remediation



Source: Transport Canada

Property name: Former Remote Radar Site 59

Custodian: Transport Canada

Location: Newfoundland and Labrador

Description: Former U.S. military site at Gander International Airport

Contaminants: Debris and PCBs

Status: Under remediation and risk management

Exhibit 3.2 Progress in addressing our recommendation on central leadership to rank high-risk sites and ensure long-term stable funding is satisfactory

Recommendation	Progress
The Treasury Board of Canada Secretariat and Environment Canada should provide central leadership to rank the high-risk sites on a government-wide basis and ensure a source of long-term stable funding to deal with these sites. (2002 Report of the Commissioner of the Environment and Sustainable Development, Chapter 2, paragraph 2.74)	Satisfactory

Satisfactory—Progress is satisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation was made.

Unsatisfactory—Progress is unsatisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation was made.

3.19 Back in the 1996–97 fiscal year, a federal interdepartmental working group recognized that departments and agencies needed specific guidance on risk management for federal contaminated sites to help ensure that these sites receive an appropriate level of action. While general guidance exists, specific risk management guidance to ensure that departments are not over- or under-investing in their contaminated sites has yet to be developed. In the absence of this guidance, Indian and Northern Affairs Canada and National Defence have developed their own risk management guidance for their contaminated sites.

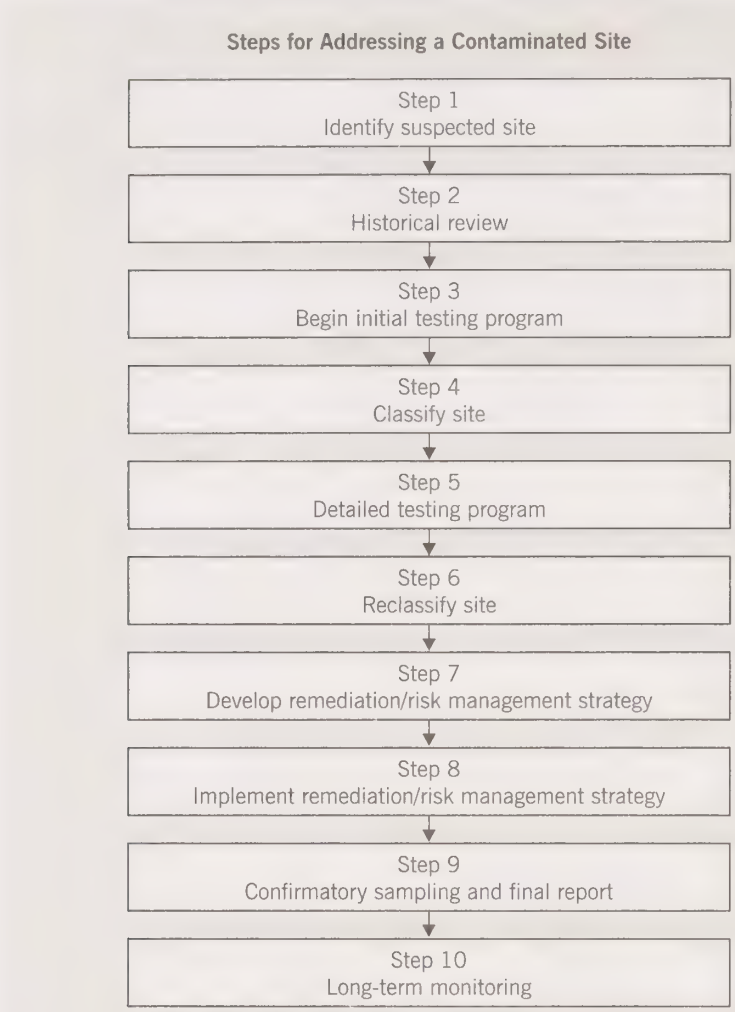
Identification, assessment, and management

3.20 The federal government has a 10-step process to deal with its contaminated sites (Exhibit 3.3):

- Identifying and assessing a site (steps 1 to 6)
- Managing the risks of a site (steps 7 and 8)
- Following-up to ensure that risks have been dealt with (steps 9 and 10)

3.21 Fisheries and Oceans Canada, Indian and Northern Affairs Canada, National Defence, and Transport Canada reported to us that they have spent about $660 million on contaminated sites from fiscal years 2002–03 to 2005–06, including about $280 million in additional funding made available in budgets 2003 and 2004. The majority of the funding spent by these four departments was spent on site remediation and risk management.

Exhibit 3.3 **The government has a process to deal with its contaminated sites**



NOTE: The steps shown above illustrate the complete process involved in dealing with contaminated sites. There will be instances where some of the steps may not be required.

Source: Contaminated Sites Management Working Group

Departments are working to ensure that contaminated sites are identified and assessed

3.22 Fisheries and Oceans Canada, Indian and Northern Affairs Canada, National Defence, and Transport Canada accepted our recommendation in 2002 to identify and assess the contaminated sites under their responsibility, and they continue to assess sites they suspect or know are contaminated. In spring 2007, we reviewed each department's records of contaminated sites to determine how many sites have been dealt with since our 2002 audit. We also requested a

representative sample of supporting documentation to assess the reliability of the data. The number of known and suspected contaminated sites continues to change as departmental databases are updated when new information becomes available.

3.23 In spring 2007, we found that Fisheries and Oceans Canada, Indian and Northern Affairs Canada, National Defence, and Transport Canada had collectively assessed approximately 2,850 sites since 2002. Once these sites are assessed, the process of determining how to deal with them begins (Exhibit 3.3).

3.24 All federal departments and agencies that have known and suspected contaminated sites are required to maintain an inventory and provide an annual update to the Treasury Board of Canada Secretariat's Federal Contaminated Sites Inventory. These updates help to create a picture of the number and status of contaminated sites that are under federal responsibility. Since 17 June 2002, the Federal Contaminated Sites Inventory database has been on the Secretariat's website. The number of sites listed in the database has increased six fold—from approximately 2,850 in 2002 to approximately 17,800 by October 2007.

3.25 The Treasury Board of Canada Secretariat now requires that departments include additional information in the inventory, such as the nature of work performed each year on these sites. Some of this information will be used for an evaluation of the Federal Contaminated Sites Action Plan program that is planned for the 2007–08 and 2008–09 fiscal years. It is important that departments keep up-to-date, readily accessible records of their contaminated site activities. This will enable the federal government to tell Parliament what has been accomplished with taxpayers' dollars.

3.26 As of October 2007, National Defence indicated that it has approximately 830 known contaminated sites. Its target for assessing approximately 220 suspected sites and determining whether they are contaminated is the 2007–08 fiscal year.

3.27 As of October 2007, Transport Canada indicated that it has approximately 360 contaminated sites, and its target for confirming whether approximately 40 suspected sites are contaminated is the end of the 2007–08 fiscal year. The Department believes that its inventory of contaminated sites is almost complete. It is currently reconciling its property records with its inventory of contaminated sites, to determine whether any additional properties still need to be assessed. It expects to complete this reconciliation within two years.

3.28 Indian and Northern Affairs Canada is responsible for dealing with contamination resulting from

- the operations of others, including First Nation communities, 21 of the 42 Distant Early Warning (DEW) line sites (the other 21 DEW line sites are the responsibility of the Department of National Defence), and abandoned mines North of 60°; and
- its own operations and lands being held for land claim settlements with First Nations.

3.29 As of October 2007, Indian and Northern Affairs Canada indicated that there are approximately 760 sites where contamination is confirmed and approximately 830 sites where it is suspected—all of the contamination has been caused by the operations of others. The Department did not confirm when all suspected sites would be assessed for contamination.

3.30 While the Department recognizes the potential for contamination on department-owned properties, it has yet to take action. In 2005, department officials requested that funding be set aside from its internal budgets to assess its properties for contaminated sites. However, at that time, the request was refused, because the funds were needed to address other department issues.

3.31 During the course of this audit, funding was approved to conduct a review of the Department's properties. The Department hopes to complete this review by December 2010. Department officials have indicated that they do not expect to uncover additional major contamination or large liabilities as a result of this assessment.

3.32 As of October 2007, Fisheries and Oceans Canada indicated that it has approximately 1,860 confirmed contaminated sites under its responsibility. However, it still has approximately 5,100 properties that it has to assess for contamination, and there may be more than one contaminated site per property. The Department has yet to set a timeline for determining whether the remaining 5,100 properties are contaminated. In our 2002 Report of the Commissioner of the Environment and Sustainable Development (CESD), we criticized the Department for not establishing a time frame to identify and confirm contaminated sites—the situation remains unchanged.

3.33 Even though the work is not yet complete, all four custodial departments continue to make progress in identifying and assessing suspected contaminated sites. With the exception of Transport Canada and National Defence, which have a target to complete assessment of their sites by the 2007–08 fiscal year, a review of the departments'

management plans, which cover a three-year period, indicate that they currently have planned assessment work until the 2009–10 fiscal year (Exhibit 3.4). The Treasury Board of Canada Secretariat has indicated that additional assessments may continue beyond the three years covered by the management plans. Assessment work can continue after contamination is confirmed at suspected sites, in order to better define site characteristics before determining how to deal with a site.

Exhibit 3.4 Progress in addressing our recommendation to identify and assess contaminated sites is satisfactory

Recommendation	Progress
Department of Fisheries and Oceans, Indian and Northern Affairs Canada, National Defence, and Transport Canada should complete the identification and assessment of contaminated sites under their responsibility. (2002 Report of the Commissioner of the Environment and Sustainable Development, Chapter 2, see paragraph 2.73)	Satisfactory

Satisfactory—Progress is satisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation was made.

Unsatisfactory—Progress is unsatisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation was made.

Departments are putting significant effort into managing contaminated sites

3.34 In spring 2007, we found that since our 2002 audit, Fisheries and Oceans Canada, Indian and Northern Affairs Canada, National Defence, and Transport Canada had done the following to deal with their contaminated sites:

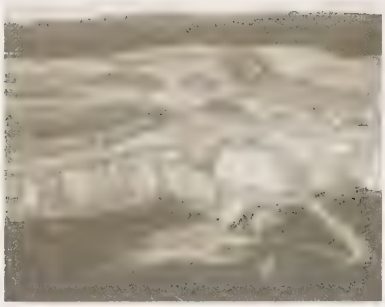
- undertaken additional care and maintenance activities on approximately 10 sites,
- completed remediation of approximately 340 sites,
- undertaken risk management activities on approximately 650 sites, and
- started remediation of approximately 480 sites.



Colomac Mine

3.35 Indian and Northern Affairs Canada has also put significant effort into dealing with contamination in abandoned mines North of 60°. In 2002, we noted that serious issues needed to be addressed in the Colomac, Faro, Giant, and Mount Nansen mines (see the case study in the 2002 Report of the Commissioner of the Environment and Sustainable Development, Chapter 3, Abandoned Mines in North).

3.36 In this follow-up audit, we found evidence of additional care and maintenance and some remediation activities that address urgent issues at these four mine sites. The Department reported to us on its goals and major activities, including the funds spent, since our 2002 audit; highlights are included in Exhibit 3.5.



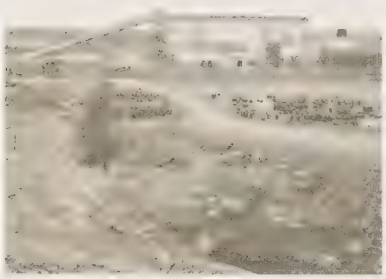
Faro Mine

Commitments and action plans need to reflect government objectives

3.37 In 2002, Environment Canada and the four custodial departments accepted our recommendation to make a firm commitment—including developing an action plan and timetable—to complete assessments, rank sites, and remediate or manage all known contaminated sites in a timely manner. The Treasury Board of Canada Secretariat partially agreed with this recommendation.

3.38 The Federal Contaminated Sites Action Plan sets government-wide objectives to

- reduce the risks posed by contaminated sites to human health and the environment, and
- effectively eliminate the financial liability associated with its known contaminated sites by 2020.



Giant Mine

3.39 As part of this plan, a list of projects to be undertaken at contaminated sites is compiled every year, so priorities can be set and additional funding can be allocated. This government-wide plan requires custodial departments seeking additional funding to develop three-year contaminated sites management plans. These plans set out targets, timeframes, activities, and expected funding requirements and are to be updated annually.

3.40 When we reviewed the management plans of the four custodial departments, we noted that some plans included a limited number of time-bound commitments to

- assess the remaining properties,
- determine whether there is contamination, and
- increase the number of contaminated sites under remediation or risk-management.

3.41 These activities are intended to reduce the risks to human health and the environmental risks from contaminated sites. However, with the exception of National Defence, it was not clear how the planned actions of individual government departments will ensure that the federal government meets its objective to effectively eliminate the financial liability of its known contaminated sites.

Exhibit 3.5 **Summary of Indian and Northern Affairs Canada's efforts to deal with contamination at four abandoned mines**

Mine	Developments since 2002	Major activities since 2002	Current financial liability estimate[1]	Goals
Colomac	Indian and Northern Affairs submitted its remediation plan to the Mackenzie Valley Land and Water Board on 31 March 2004. In December 2005, a contract was awarded for completion of the remediation work. Spending since 2002: about $72 million Planned spending for 2007–08 to 2011–12: about $28 million	Ongoing care and maintenance includes water treatment, seepage collection, and water diversion. The remediation of hydrocarbon contaminated soils occurred and a program for hazardous and non-hazardous waste disposal continues. The risk of dam failure identified in the 2002 audit was mitigated.	$27.3 million	Remediate the Colomac Mine by 2008–09 and continue ongoing site monitoring for five years. Once the remediation is complete, the dam will be inspected periodically.
Giant	The mine site was turned over to the federal government in 1999. The Giant Remediation Plan was completed in August 2006. Spending since 2002: about $47 million Planned spending for 2007–08 to 2011–12: about $41 million	Ongoing care and maintenance includes mine water management, water treatment, and dust suppression. The Giant project has been primarily focused on technical studies and consultations related to dealing with stored arsenic trioxide at the site. A preferred alternative has been selected and a remediation plan developed. Water licence application is scheduled to begin in fall 2007.	$333 million	Start remediation work by 2010, if appropriate regulatory approvals are received, and remediate to industrial standards by 2020. Mine water will need to be continually pumped and treated to remove arsenic for years after 2020.
Faro	More than 75 investigative studies were completed to enable the development and design of a final closure and reclamation plan. Spending since 2002: about $70 million Planned spending for 2007–08 to 2011–12: about $55 million	Ongoing care and maintenance includes water treatment operation such as maintaining dams. Some site remediation has also occurred. The greatest risk, a possible dam breach, was mitigated in 2004. Closure alternatives have been developed and refined and are subject to independent peer reviews.	$523 million	Have a closure plan in place by spring 2009. The closure may take up to 20 years to complete, and contaminated water will need to be treated for several hundred years.

Summary of Indian and Northern Affairs Canada's efforts to deal with contamination at four abandoned mines (continued)

Mine	Developments since 2002	Major activities since 2002	Current financial liability estimate[1]	Goals
Mount Nansen	In 2004, the owner of the mine was successfully placed into receivership. Preparations then began for the closure planning process. Spending since 2002: about $7 million Planned spending for 2007–08 to 2011–12: about $19 million	Ongoing care and maintenance includes treatment of tailings pond water. Some legal issues related to ownership of property on the mine site still need to be resolved to provide the legal certainty required to move ahead with remediation.	$12.3 million	A closure plan will be finalized and is expected to be implemented in March 2009. Once the remediation is complete, ongoing monitoring will be required.

[1] Liability estimates are based on the lowest cost option to clean up the site and excludes monitoring costs.



Mount Nansen Mine

3.42 Of the departmental contaminated sites management plans we examined, National Defence's plan was the only one that included a clear objective to contribute to the broader government objective of effectively eliminating the known liability related to contaminated sites by 2020. In its 2003 sustainable development strategy, National Defence made a commitment to reduce its contaminated sites financial liability by four percent per year. In 2006, we audited the Department's remediation expenditures and found that it had reduced its financial liability by about 11 percent in the 2004–05 fiscal year. This is consistent with what the Department reported to Parliament in its 2004–05 *Departmental Performance Report*. The Department has since made a commitment to reduce its financial liability by seven percent per year, which will help the federal government meet its commitment to effectively eliminate the federal financial liability for known sites by 2020.

3.43 During the course of our audit, the Treasury Board of Canada Secretariat issued updated guidelines to departments on what to include in their next round of management plans. The Secretariat now requires departments to indicate how their management strategy will help them meet the long-term objectives of the Federal Contaminated Sites Action Plan program (Exhibit 3.6). The Treasury Board of Canada Secretariat needs to ensure that departmental management plans align with the government objective to effectively eliminate the financial liability of known contaminated sites by 2020.

Exhibit 3.6 **Progress in addressing our recommendation to establish a firm commitment to deal with federal contaminated sites is satisfactory**

Recommendation	Progress
Treasury Board of Canada Secretariat and Environment Canada, in conjunction with Department of National Defence, Fisheries and Oceans Canada, Indian and Northern Affairs Canada, and Transport Canada, should establish a firm commitment including an action plan and timetable to complete assessments, rank sites, and clean up or manage all known contaminated sites in a timely manner. (2002 Report of the Commissioner of the Environment and Sustainable Development, Chapter 2, see paragraph 2.75)	Satisfactory

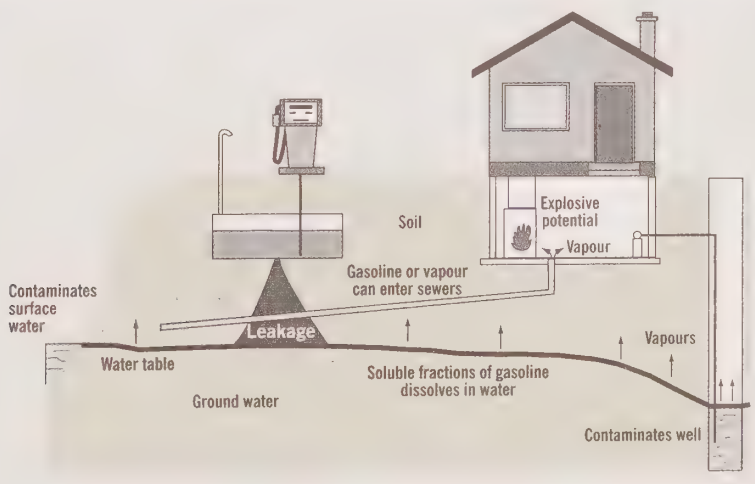
Satisfactory—Progress is satisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation was made.

Unsatisfactory—Progress is unsatisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation was made.

Petroleum storage tanks

3.44 Petroleum is a major source of contamination on federal lands. In 2002, Environment Canada estimated that petroleum products can be found in about 66 percent of contaminated sites under federal responsibility. Spills and leaks from petroleum storage tanks have contaminated groundwater and soil. This can have a negative impact on human health and the environment. Depending on the surrounding environment and the amount and type of petroleum products that have spilled or leaked, the impact could be very significant (Exhibit 3.7). For example, one litre of gasoline can render one million litres of water unfit for human consumption.

Exhibit 3.7 **Leaking underground petroleum storage tanks can cause a number of problems**



Source: Environment Canada

New regulations are not in place

3.45 The government has stated that preventive measures are needed to protect human health and the environment from leaking petroleum storage tanks on federal lands. In 2002, the federal government estimated that the average cost to clean up a site with a leaking underground petroleum storage tank was $500,000.

3.46 In our 2002 report, we noted that there were significant gaps in the 1997 Federal Registration of Storage Tank Systems for Petroleum Products and Allied Petroleum Products on Federal Lands or Aboriginal Lands Regulations. The 1997 regulations did little, if anything, to reduce contamination caused by spills and leaks.

3.47 During our 2002 audit, Environment Canada informed us that it expected to publish updated regulations in the *Canada Gazette*, Part I, by March 2003. These regulations are still not in place.

The federal government did not follow its own existing regulations

3.48 Not all federal petroleum storage tanks were registered, as required in the 1997 regulations. Indian and Northern Affairs Canada expects to have a complete list of its storage tanks by the 2009–10 fiscal year. Fisheries and Oceans Canada could not tell us when it would have a complete list of its storage tanks. In 2004 and 2005, Environment Canada hired consultants to develop a costing model and estimate the compliance costs of the proposed regulations. Part of this analysis included estimating the number of petroleum storage tanks under federal responsibility.

3.49 Environment Canada has done limited inspections of petroleum storage tanks on federal facilities to ensure that departments were registering them, as required under the 1997 regulations. A total of 39 on-site inspections were carried out between April 2000 and May 2007 and Environment Canada noted five non-compliance issues. Warning letters were sent to the responsible managers.

Proposed regulations allow high-risk storage tanks to remain in service

3.50 When Environment Canada estimated what the proposed regulations would cost to implement, it assumed that petroleum storage tanks that were installed before 1987 (or had unknown dates of installation) were leaking. Current inventories, provided by the four

custodial departments, listed approximately 2,600 storage tanks that were installed before 1987 (or had unknown dates of installation). Some of those tanks were installed as early as 1950—well before current standards to prevent leaking were established.

3.51 New regulations were proposed in April 2007 to address the shortcomings of the 1997 regulations. Among other things, the proposed new regulations would require

- immediate withdrawal of leaking tanks from service,
- regular leak detection testing, and
- design and installation of new storage tank systems or components of a new system that is based on specific technical requirements.

The proposed regulations would also require that high-risk storage tank systems be permanently removed from service within four years of the regulations becoming law.

3.52 Department officials indicated that the regulations were delayed because the cost-benefit analysis took longer than initially anticipated; they now expect the regulations to be in place by February 2008.

3.53 High-risk storage tanks—those that are more likely to leak—could remain in service up to four years after the regulations are put in place. The Treasury Board has a policy that requires that federal property be managed in an environmentally responsible manner. This means that petroleum storage tanks under federal responsibility need to be dealt with in a responsible and timely manner. In this instance, the government has failed to meet its commitments to lead by example and green its own operations (Exhibit 3.8).

Exhibit 3.8 Progress in addressing our finding on petroleum storage tank regulations is unsatisfactory

Finding	Progress
Storage tanks—Environment Canada officials informed us that they expect to publish updated regulations in the *Canada Gazette*, Part I, by March 2003. (2002 Report of the Commissioner of the Environment and Sustainable Development, Case Study: Storage tanks—Significant gaps exist in current regulations)	Unsatisfactory

Satisfactory—Progress is satisfactory, given the significance and complexity of the issue, and the time that has elapsed since the finding was made.

Unsatisfactory—Progress is unsatisfactory, given the significance and complexity of the issue, and the time that has elapsed since the finding was made.

Accounting for costs of dealing with contaminated sites

3.54 In 2002, we found that the federal government had not fulfilled its commitment to recognize the costs of dealing with its contaminated sites, as required by the government's Policy on Accounting for Costs and Liabilities Related to Contaminated Sites. We recommended that it fulfill its commitment by determining and reporting these costs. The Treasury Board of Canada Secretariat agreed with our recommendation.

Departments are determining and reporting the cost of dealing with contaminated sites under their responsibility

3.55 Assessments of potential contaminated sites are key to estimating the costs of dealing with contaminated sites under federal responsibility. The Policy on Accounting for Costs and Liabilities Related to Contaminated Sites, effective 1 April 2002, requires departments to identify the estimated costs of managing and remediating known contaminated sites and to report those costs as liabilities. Departments are also required to submit to the Secretariat detailed information about environmental liabilities, such as new expenses and payments made to clean up sites as well as information about environmental assessment activities. The Secretariat uses this information to determine the total environmental liability amount for the government.

3.56 The Secretariat reviews and reconciles the financial information that departments submit to the Federal Contaminated Sites Inventory with the departments' financial records. It also monitors the differences between the two sources of information and addresses any discrepancies with the departments. For example, during the 2005–06 fiscal year, the Secretariat found differences resulting from

- a lack of understanding of what information was required,
- incomplete information provided by departments and agencies, and
- some conversion and input errors.

3.57 Each year that our office has audited the government's summary financial statements, which include environmental liabilities for contaminated sites, it has been the opinion of the Auditor Gereral that the financial statements presented fairly, in all material respects, the financial position of the government. We also examined amounts paid for clean-up costs, new assessment data, and newly identified sites, and we reviewed a selection of sites to determine if the assessment is complete and all costs have been considered.

3.58 In 2003, the federal government began to include the estimated cost of dealing with contaminated sites under federal responsibility in the government's summary financial statements. On 31 March 2007, the government reported that contaminated sites under its responsibility represent a financial liability of about $3.1 billion (this excludes approximately $2.9 billion to decommission nuclear facilities). In addition, as of the 2005–06 fiscal year, departments began to publish unaudited financial statements in their departmental performance reports and to include information on environmental liabilities (Exhibit 3.9).

Exhibit 3.9 Progress in addressing our recommendation to determine and report costs of dealing with contaminated sites is satisfactory

Recommendation	Progress
The Treasury Board of Canada Secretariat, in conjunction with all federal departments and agencies responsible for contaminated sites, should determine the costs to deal with all known contaminated and suspected sites, and the Secretariat should report them in the federal government's financial statements. (2002 Report of Commissioner of the Environment and Sustainable Development, Chapter 2, see paragraph 2.60)	Satisfactory

Satisfactory—Progress is satisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation was made.

Unsatisfactory—Progress is unsatisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation was made.

Conclusion

3.59 The federal government has made satisfactory progress in dealing with contaminated sites under its responsibility. Since our 2002 audit, the Treasury Board of Canada Secretariat and Environment Canada have provided central leadership to rank priority contaminated sites, on a government-wide basis. In addition, in 2005, the federal government initially allocated $1.5 billion over five years to deal with its contaminated sites, as a first instalment of its $3.5 billion budget announcement.

3.60 The Treasury Board of Canada Secretariat, in conjunction with all federal departments and agencies responsible for contaminated sites, has estimated the costs of dealing with known contaminated sites. In addition, the Treasury Board of Canada Secretariat has reported the costs in the federal government's summary financial statements.

3.61 Fisheries and Oceans Canada, Indian and Northern Affairs Canada, National Defence, and Transport Canada have made progress in identifying and assessing the contaminated sites under their responsibility. The federal government has identified about 17,800 known or suspected contaminated sites that it must now deal with—this is over six times more than was known at the time of our 2002 audit.

3.62 A federal government objective is to effectively eliminate the federal liability of its known sites by 2020. However, with the exception of National Defence, departmental action plans did not reflect how this would be achieved. The Treasury Board of Canada Secretariat has issued additional guidance that requires departments to indicate how their management plans will help to meet the long-term objectives of the Federal Contaminated Sites Action Plan program.

3.63 It is far less costly to prevent contamination than to manage it later. In 2002, the federal government found that contamination from petroleum products is found in about 66 percent of its contaminated sites. Regulations to deal with the federal petroleum storage tank problem were promised for March 2003, but are now scheduled for February 2008. The proposed regulations will allow high-risk storage tanks—those that are more likely to leak—to remain in service for up to four years after the regulations are put in place. This could cause additional contamination—which is not in keeping with federal government commitments to lead by example by greening its own operations.

About the Audit

Objectives

The objective of our audit was to determine whether Environment Canada, Fisheries and Oceans Canada, Indian and Northern Affairs Canada, National Defence, Transport Canada, and the Treasury Board of Canada Secretariat have made satisfactory progress in implementing selected key recommendations and addressing a finding made in prior years with respect to managing selected aspects of contaminated sites.

Our sub-objectives were to determine whether satisfactory progress has been made by

- the Treasury Board of Canada Secretariat and Environment Canada, in providing central leadership to deal with these sites;
- Fisheries and Oceans Canada, Indian and Northern Affairs Canada, National Defence, and Transport Canada, in identifying and assessing contaminated sites under their responsibility;
- the Treasury Board of Canada Secretariat and Environment Canada—with Fisheries and Oceans Canada, Indian and Northern Affairs Canada, National Defence, and Transport Canada—in committing to deal with contaminated sites in a timely manner;
- Environment Canada, in developing regulations to prevent contamination caused from spills or leaks from petroleum storage tanks; and
- the Treasury Board of Canada Secretariat—with all federal departments and agencies responsible for contaminated sites—in determining the costs of dealing with all known contaminated and suspected sites, and the Secretariat, in reporting them in the federal government's financial statements.

Scope and approach

This follow-up audit examined selected issues from the 2002 audit of Federal Contaminated Sites. Issues that we examined in this audit were selected based on their current level of relevance and significance.

We issued a questionnaire on the management of contaminated sites under federal responsibility, to Fisheries and Oceans Canada, Indian and Northern Affairs Canada, National Defence, and Transport Canada. These departments, which collectively are responsible for approximately 89 percent of the contaminated sites under federal responsibilty (excluding the decommissioning of nuclear facilities), all responded. We analyzed the responses and obtained supporting documentation. We reviewed files to verify certain responses, and we interviewed the staff involved in managing contaminated sites, to confirm facts and gain additional information.

For each department, we reviewed records of their known and suspected contaminated sites. As of March 2007, the population sizes for contaminated sites at Fisheries and Oceans Canada, Indian and Northern Affairs Canada (Northern and Southern programs), National Defence, and Transport Canada were 4,126, 2,417 (100 and 2,317), 1,476, and 762, respectively. Random sample sizes of 34, 63 (29 and 34), 34, and 34, respectively, were combined to provide a level of accuracy of +/- 1.9 percent, 19 times out of 20. Departments were able to locate approximately 91 percent (209 out of 229) of the supporting documents we requested. Supporting documentation was requested from each site. Sites reviewed met the criteria of undertaking assessment, care and maintenance, risk-management, or remediation work.

We examined Treasury Board of Canada Secretariat and Environment Canada's central leadership in dealing with contaminated sites by reviewing files and conducting interviews.

We also followed up on a case study from our 2002 CESD Report—Chapter 3, Abandoned Mines in the North—to assess progress at the Colomac, Faro, Giant, and Mount Nansen mines. Collectively, these four mines represent about 30 percent of the federal contaminated sites' financial liability. We visited the four mine sites and reviewed files at Indian and Northern Affairs Canada that included engineering reports and reviewed the funds spent to deal with these sites since 2002. We also interviewed staff at the mines and at headquarters.

We used the conclusions for each audited issue, and our professional judgment, to determine whether the entity has made satisfactory or unsatisfactory progress against each of the original recommendations and against the finding that we followed up on.

Criteria

The criteria for this audit were derived from recommendations and a finding in our 2002 CESD Report, Chapter 2, The Legacy of Federal Contaminated Sites.

We expected that the Treasury Board of Canada Secretariat and Environment Canada would have provided central leadership by

- ranking the high-risk contaminated sites on a government-wide basis, and
- ensuring long-term stable funding to deal with sites under federal responsibility.

We expected that for the contaminated sites under their responsibility, Fisheries and Oceans Canada, Indian and Northern Affairs Canada, National Defence, and Transport Canada would have

- identified sites requiring an assessment, and
- made progress in conducting site assessments.

We expected that the Treasury Board of Canada Secretariat and Environment Canada—with Fisheries and Oceans Canada, Indian and Northern Affairs Canada, National Defence, and Transport Canada—would have made a firm commitment that includes an action plan and timetable to

- complete assessments,
- rank sites, and
- clean up or manage all known contaminated sites in a timely manner.

We expected that the Treasury Board of Canada Secretariat, with all federal departments and agencies responsible for contaminated sites, would have

- determined the cost of dealing with all known contaminated and suspected sites, and
- reported the cost in the federal government's financial statements.

We expected that Environment Canada developed regulations to prevent contamination caused by spills or leaks from petroleum storage tanks.

Audit work completed

The audit work for this chapter was substantially completed on 30 October 2007.

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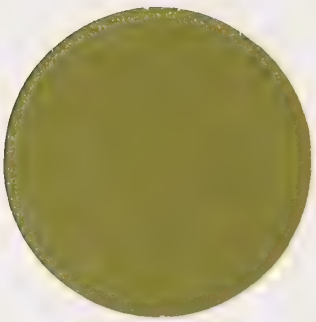
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Ecosystems

Chapter 4
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Chapter

4

Federal Protected Areas for Wildlife

All of the audit work in this chapter was conducted in accordance with the standards for assurance engagements set by The Canadian Institute of Chartered Accountants. While the Office adopts these standards as the minimum requirement for our audits, we also draw upon the standards and practices of other disciplines.

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Ecosystems
Federal Protected Areas for Wildlife

Main Points

What we examined

Environment Canada is responsible for managing 51 national wildlife areas and 92 migratory bird sanctuaries. These sites are established under legislation to protect significant habitat for wildlife, including species at risk and migratory birds. These federal protected areas for wildlife were the focus of our audit.

In 2001, we found that Environment Canada lacked up-to-date management plans and species inventories for its protected areas in the Great Lakes and St. Lawrence River basin. Further, we were concerned about inadequate enforcement of regulations pertaining to those protected areas. We recommended that the Department assess the state of its protected areas in the basin, prepare a strategy for managing them, and report regularly on their condition and management. Environment Canada agreed with our recommendations and committed to take appropriate action, contingent on available resources.

In our follow-up work for this chapter, we examined Environment Canada's progress in implementing our recommendations. Although our 2001 audit focused on the Great Lakes and St. Lawrence River basin, the Department manages its activities on a national basis and therefore our follow-up audit examined its management of protected areas from a national perspective.

Why it's important

The federal government has frequently asserted that sound management of Canada's natural resources and biodiversity is critical to ensuring our social, economic, and environmental well-being. However, according to Environment Canada, the wildlife habitat that contributes to Canada's natural heritage is being lost. Habitat loss and degradation is now the single greatest threat to plants and animals in Canada.

The protection and conservation of habitat is critical to Canada's efforts to conserve biodiversity. Environment Canada's protected areas network is intended to provide a safe haven for birds, a home for species at risk, and protection for wetlands that are vital to maintaining water quality and quantity. If Canada's biodiversity is

to be safeguarded, the network's ecological integrity must be actively protected against the increasing threats of human disturbance, development pressures, invasive species, pollution, and climate change.

What we found

- Environment Canada has made unsatisfactory progress in responding to our recommendations on national wildlife areas and migratory bird sanctuaries. These areas are at risk.
- Environment Canada has identified specific threats to each of its protected areas, but the Department has not assessed whether conditions are improving or deteriorating at the sites, nor used the information collected to address threats on a priority basis.
- Environment Canada has developed a national strategy to guide the management of sites in its protected areas network, but the strategy is not being fully implemented. For example, most protected areas still lack up-to-date management plans.
- Environment Canada has not established explicit performance expectations against which progress can be assessed, and does not comprehensively monitor or regularly report on the condition and management of its network of protected areas.
- According to its own analyses, Environment Canada has allocated insufficient human and financial resources to address urgent needs or activities related to the maintenance of sites and enforcement of regulations in protected areas.

The Department has responded. The Department agrees with the recommendation. Its detailed response follows the recommendation in the chapter.

Introduction

For more information on the federal government's management of species at risk, please consult Chapter 5, Protection of Species at Risk, and Chapter 12, Listing of Species at Risk, in this report.

4.1 To ensure their survival, species require adequate habitat within which to live, breed, and migrate. According to Environment Canada, habitat loss and degradation is now the single greatest threat to plants and animals in Canada. A habitat does not have to be totally destroyed to make it unsuitable for some species. The presence of people and associated disturbance can cause some species to abandon habitats or prevent them from breeding successfully. About 60 percent of species at risk are affected by habitat problems.



1887—Last Mountain Lake is established as Canada's first bird sanctuary.

4.2 Recognizing this, over the past century Canada has enacted legislation, signed international agreements, and developed policies to protect migratory birds, species at risk, and their habitats:

- **1887**—Last Mountain Lake is established as Canada's first bird sanctuary. This site is now a national wildlife area, migratory bird sanctuary, and wetland of international importance.
- **1917**—In response to the Canada–United States Migratory Birds Convention (1916), Canada enacts the *Migratory Birds Convention Act* to protect migratory birds from harmful activities such as hunting. Regulations under the Act establish migratory bird sanctuaries to support the seasonal habitat needs of migratory birds.
- **1973**—Canada enacts the *Canada Wildlife Act*. This Act enables the designation of national wildlife areas for the purposes of wildlife research, conservation, and interpretation.
- **1981**—Canada adopts the 1971 *Ramsar Convention on Wetlands of International Importance* and its objectives of stemming progressive encroachment on and loss of wetlands, and of ensuring the conservation and sustainable use of wetlands.
- **1992**—Canada adopts the *Convention on Biological Diversity*, including its objectives to establish and manage protected areas where special measures are needed to conserve biodiversity.
- **1994**—The *Canada Wildlife Act* is amended to enable the establishment of marine wildlife areas to protect habitat in Canada's coastal waters. While several sites are under study, no marine wildlife area has yet been created.
- **2002**—The *Species at Risk Act* is passed by Parliament.

4.3 Protected areas are internationally recognized as an effective tool for the conservation of biodiversity. Environment Canada is responsible for a national network of areas intended to protect significant habitat

for wildlife, including migratory birds, and species at risk. This network currently includes 51 national wildlife areas and 92 migratory bird sanctuaries (Exhibits 4.1 and 4.2). Of this total, 15 sites also contain wetlands recognized as being of international importance. The estimated 11.8 million hectares protected by this network are second in area only to Canada's national parks (36 million hectares).

4.4 Exhibit 4.3 presents the key features of Canada's national parks and federal protected areas for wildlife.

4.5 As noted in Exhibit 4.3, Environment Canada does not own the land on which most migratory bird sanctuaries are situated. While it maintains a responsibility for enforcing regulations and monitoring migratory birds in these areas, the Department considers the management of these sanctuaries, including any measures put in place to conserve their habitat, to be the responsibility of the landowner.

Exhibit 4.1 **Environment Canada maintains a national network of protected areas**



Source: Environment Canada, 2007

What we examined in 2001

4.6 In 2001, we examined the federal government's efforts to conserve wetlands habitat in the Great Lakes and St. Lawrence River basin, including the management of national wildlife areas and migratory bird sanctuaries. We found that the ecological integrity of these protected areas was at risk, because Environment Canada lacked the human and financial resources to manage them effectively.

A protected area has **ecological integrity** when its natural components (plants, animals, and other organisms) and processes (such as growth and reproduction) are intact.

Events since 2001

4.7 Passed in 2002, the *Species at Risk Act* introduces a new legal obligation for wildlife protection and conservation. Where species at risk are identified in national wildlife areas and migratory bird sanctuaries, federal landowners will be required to respect prohibitions under the Act.

4.8 In 2003, the **National Round Table on the Environment and the Economy** issued *Securing Canada's Natural Capital: A Vision for Nature Conservation in the 21st Century*. This report noted that national wildlife areas and migratory bird sanctuaries were under-used federal tools for conservation. The report recommended that the federal government allocate $175 million over the next five years to enhance the national network.

The **National Round Table on the Environment and the Economy** was established as an advisory body reporting to governments and the Canadian public. Its members are appointed by the Prime Minister and include leaders in business and labour, universities, environmental organizations, Aboriginal communities, and municipalities.

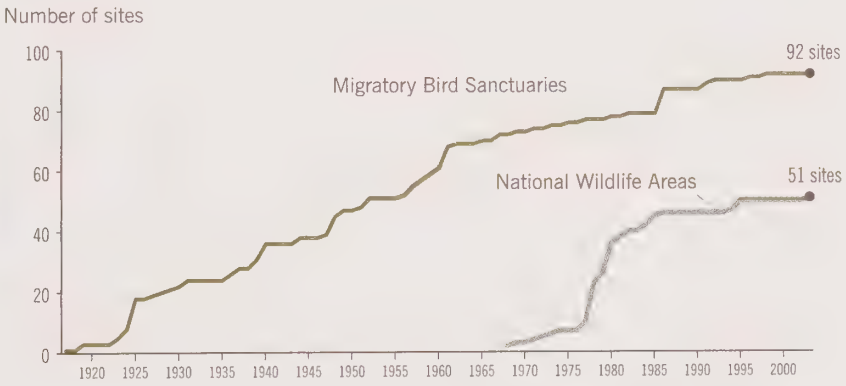
Focus of the audit

4.9 The objective of our follow-up audit was to determine whether Environment Canada has made satisfactory progress in implementing recommendations and observations made in our 2001 Report with



Ontario's Long Point National Wildlife Area contains more than 30 species at risk. At least 25 sites in the network each protect more than 5 species at risk.

Exhibit 4.2 Since 1917, 143 national wildlife areas and migratory bird sanctuaries have been created



Source: Environment Canada, 2002

Key features of Canada's federal protected areas

Protected areas	Number of sites[1]	Total area[1] (hectares)	Authority	Federal lead	Land ownership	Purpose	Criteria for designation	Prohibited activities
National Parks	46[2]	36,090,310[2]	*Canada National Parks Act*	Parks Canada	federal	Dedicated to the people of Canada for their benefit, education, and enjoyment.	Supports a representative sample of Canada's natural heritage.	Industrial or commercial use of resources is generally not permitted. Recreational activities are permitted in all national parks.
National Wildlife Areas	51	529,170	*Canada Wildlife Act*	Environment Canada	mostly federal	To protect wildlife and wildlife habitat for the purpose of conservation, research, and/or interpretation.	Supports an important population of migratory birds, species at risk, or rare or unusual wildlife habitat.	No activities are allowed without a permit. Activities such as recreation are allowed in most areas.
Migratory Bird Sanctuaries	92	11,239,722	*Migratory Birds Convention Act*	Environment Canada	mixed[3]	To protect migratory birds, their nests, eggs, and habitat.	Supports and/or provides critical habitat for an important population of migratory birds.	No hunting or disturbance of migratory birds or their nests without a permit. Activities such as recreation are allowed in most areas.

[1]Changes to areas may be made over time, for example, as land claims are settled or as (parts of) a protected area are otherwise deregulated.

[2]Total includes both existing national parks and land withdrawn for future national parks or national park reserves.

[3]Mixed land ownership—federal, provincial, other Crown, municipal, and/or private

respect to assessing, monitoring, maintaining, and reporting on the state and management of its national wildlife areas and migratory bird sanctuaries. Although our 2001 audit focused on the Great Lakes and St. Lawrence River basin, the Department manages its activities on a national basis and therefore our follow-up audit examined its management of protected areas from a national perspective.

4.10 More details on the audit objective, scope, approach, and criteria are in **About the Audit** at the end of this chapter.

Observations and Recommendation

Assessing risks to protected areas

The Department has made progress in assessing risks to protected areas

4.11 In 2001, we identified weaknesses in Environment Canada's monitoring of national wildlife areas and migratory bird sanctuaries. We recommended that the Department comprehensively assess the environmental state and management of its protected areas.

4.12 In 2002, Environment Canada responded by producing a report on the ecological integrity of Canada's national wildlife areas and migratory bird sanctuaries. The Department's *State of Federal Protected Areas for Wildlife* report identifies the sites that are most at risk and the relative importance of numerous existing and potential threats to their ecological integrity.

4.13 Based on this report, which provides Environment Canada's first comprehensive snapshot of its protected areas network, we conclude that the Department has made satisfactory progress since 2001 in assessing the environmental state of its protected areas (Exhibit 4.4).

Exhibit 4.4 Progress in addressing our recommendation on assessing the state and management of federal protected areas is satisfactory

Recommendation	Progress
Environment Canada should comprehensively assess the environmental state and management of national wildlife areas and migratory bird sanctuaries in the basin. (2001 Report of the Commissioner of the Environment and Sustainable Development, Chapter 1, section 5.1.24)	Satisfactory

Satisfactory—Progress is satisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation was made.

Unsatisfactory—Progress is unsatisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation was made.

Regular monitoring of conditions still needed

4.14 Despite this progress, we are concerned that regular monitoring—a critical management tool—is not being done. Specifically, we are concerned that

- the survey response for most sites is not supported by the scientific data that is required to assess the condition of habitats and species; and
- no follow-up survey has been completed or is planned to determine whether conditions across the network are improving or deteriorating.

4.15 The Department's 2002 report also had minimal impact on the management of protected areas. The report included 18 recommendations for more effective management; however, at the time of our examination, the Department had yet to align its priorities and resources to address urgent needs in the areas of greatest concern, such as controlling human disturbance.

4.16 Protected areas are under threat from stressors that originate both inside and outside their boundaries. Exhibit 4.5 summarizes the key threats to protected areas and estimates the number of sites affected. While tourism and human disturbance threaten the largest number of sites, risks such as oil and gas development have a greater potential for harm. These pressures are increasing. For example, the environmental impact of proposals for natural gas development and transportation is under review in the Suffield National Wildlife Area and the Kendall Island Migratory Bird Sanctuary. Elsewhere, there is pressure to allow other activities that may conflict with habitat conservation, such as agriculture, recreation, and road building.

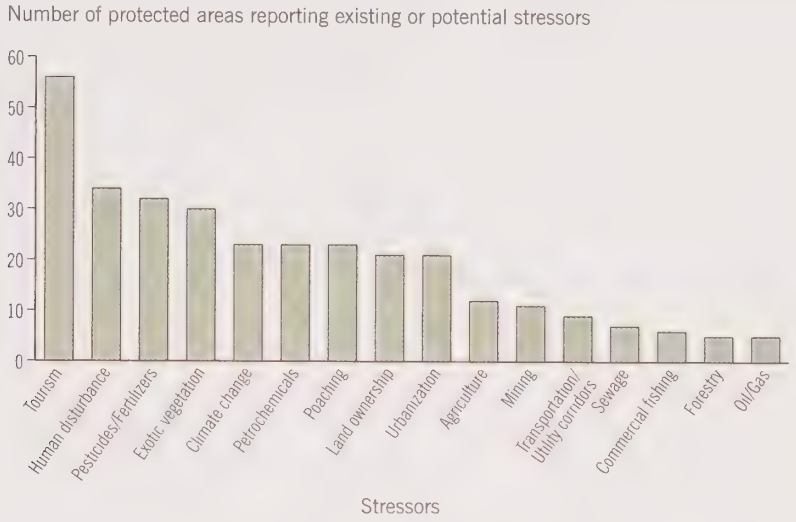


The Victoria Harbour Migratory Bird Sanctuary has become extensively urbanized, limiting its value as a habitat for migratory birds.

4.17 Currently, all proposed activities are considered on a case-by-case basis. According to Environment Canada, nationally consistent policies are necessary to address rapidly growing pressures on protected areas. The Department is drafting a policy on the regulation of activities in such areas. When completed, this policy is intended to address ongoing concerns about the lack of adequate guidelines to identify appropriate and allowable activities in protected areas.

4.18 According to Department officials, at least 10 sanctuaries may no longer meet the criteria of a protected area. The habitat in these areas has been converted to other uses such as urban developments, marinas, and golf courses. Since 1980, several sanctuaries have had their protected designation removed.

Exhibit 4.5 Environment Canada's protected areas face significant threats to their ecological integrity



Source: Environment Canada, *State of Federal Protected Areas for Wildlife*, 2002

Applying a strategic approach

4.19 In 2001, we observed that Environment Canada lacked the human and financial resources necessary to provide effective management of protected areas. We recommended that Environment Canada prepare a strategy for effectively managing national wildlife areas and migratory bird sanctuaries. In response, Environment Canada agreed to develop such a strategy, but noted that implementing it would depend on available resources. We expected that, in the six years that have passed since our initial audit, Environment Canada would have developed and would be implementing such a strategy.

The Department has developed a strategic framework

4.20 In 2005, Environment Canada began to implement its newly developed *Protected Areas Manual*. The manual provides a comprehensive set of national policies and procedures to guide the establishment and management of national wildlife areas and migratory bird sanctuaries. It also includes a strategic framework for the network and outlines specific activities required to properly manage protected areas, such as planning, issuing permits, monitoring, enforcement, habitat and wildlife management, and site maintenance (Exhibit 4.6). While enforcement is the responsibility of designated enforcement officers, managers of protected areas are responsible for the other activities.

Exhibit 4.6 Environment Canada's Strategic Framework

Vision: A comprehensive protected areas network that contributes to the conservation and protection of Canada's wildlife and the ecosystems of which they are a part.

Strategic directions

1. Establish program principles, policies, goals, and priorities.
2. Manage sites effectively.
3. Link and coordinate with other protected areas programs.
4. Protect the integrity of existing sites.
5. Raise public awareness.
6. Grow the network.

Source: Adapted from Environment Canada Protected Areas Manual, 2005.

Gaps remain in the Department's strategic approach

4.21 While the Department has identified priorities for effective management, concrete action has been limited. In 2006, Environment Canada completed a management review to determine its level of compliance with the requirements specified in its manual. The review found significant gaps between specified requirements and the management of the network, particularly in the areas of enforcement, data management, and annual work planning.

The Department has not balanced resources with expectations



An observation tower

4.22 In 2003, Environment Canada published *Contributing to Ecological Integrity: Environment Canada's Protected Areas*. This discussion paper indicated that the Department's capacity for managing protected areas has been in decline since 1977 and that the human and financial resources allocated to its protected areas program were not sufficient for the Department to meet all of its legislative and operational requirements.

4.23 Environment Canada also recognizes the need to address other land management priorities. For example, sites are poorly marked and lack accurate boundary mapping. Land acquisition is incomplete. Site managers struggle to maintain infrastructure such as buildings, roads, bridges, and observation towers, to avoid public safety liabilities.

4.24 In 2006, Environment Canada's preliminary management review estimated that addressing the most urgent needs of the network—public safety, enforcement, and ecological integrity—would require a significant increase in allocated resources. A more detailed management review is now under way to add precision to this estimate.

4.25 Ensuring that performance expectations are clearly linked to and balanced with the necessary authorities, skills, and resources is essential for effective management and accountability. Environment Canada has not yet balanced its expectations for the protected areas network with the necessary human and financial resources to deliver on them.

Developing management plans for protected areas

4.26 Good management plans are needed to guide the achievement of specific goals and objectives. Good management plans are updated periodically, as planned action is completed, as corrective measures are identified, or as priorities change and new issues emerge. In the absence of such plans, it is difficult to effectively manage or assess progress.

4.27 In 2000, Environment Canada made a commitment to develop and implement management plans for all of its protected areas. In 2001, we observed that most of the management plans for protected areas in the Great Lakes and St. Lawrence River basin had not been updated since the early- to mid-1980s.

4.28 The Department's *Protected Areas Manual* includes a commitment to develop management plans and provides a template for doing so. According to the manual, plans are to be created when a protected area is established, and reviewed after the first five years and every 10 years thereafter.

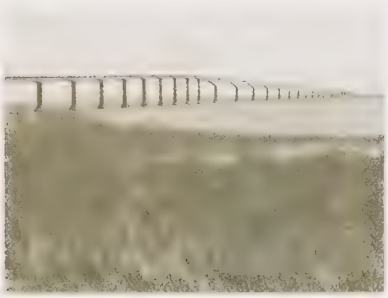
4.29 In this follow-up audit, we expected that Environment Canada would have developed and would be implementing management plans for its protected areas.

Management plans do not meet the Department's guidelines

4.30 Although management plans have been developed for most national wildlife areas, they have been developed for only a limited number of migratory bird sanctuaries, and the majority of existing plans have not been updated since the 1980s (Exhibit 4.7).

Exhibit 4.7 Management plans for most protected areas are either lacking or out of date

Designation	Total protected areas	Protected areas with management plan	Average date of management plans
Migratory bird sanctuaries	92	16	1989
National wildlife areas	51	47	1987



Confederation Bridge, Cape Jourimain National Wildlife Area

4.31 According to Environment Canada, the impact of missing and outdated management plans is negligible for sites under limited stress, such as many of those located in remote areas. However, Department officials also identified numerous protected areas where there is a need to update management plans in order to more effectively direct the use of resources, the management of permits, communications, and enforcement. For example, located at the New Brunswick end of the Confederation Bridge, the Cape Jourimain National Wildlife Area contains an interpretation centre that receives thousands of visitors each year. The management plan for this protected area was last updated in 1994, three years before the bridge was built, and seven years before the interpretation centre was completed.

4.32 In its 2006 management review, Environment Canada found that it had met the requirements of the *Protected Areas Manual* for management plans, even though it recognized that these plans need to be updated. No other requirement of the manual included in the review was being achieved. Given that the manual's requirements are not yet being fully implemented, we conclude that the Department has made unsatisfactory progress in developing and implementing a strategic approach to management (Exhibit 4.8).

Exhibit 4.8 Progress in addressing our recommendation on a strategic approach to federal protected areas is unsatisfactory

Recommendation	Progress
Environment Canada should prepare a strategy for effectively managing national wildlife areas and migratory bird sanctuaries in the basin. (2001 Report of the Commissioner of the Environment and Sustainable Development, Chapter 1, section 5.1.25)	Unsatisfactory

Satisfactory—Progress is satisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation was made.

Unsatisfactory—Progress is unsatisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation was made.

Enforcing legislation and regulations

4.33 The federal government has legislation and regulations intended to safeguard Environment Canada's protected areas, prohibiting activities that could be harmful to species and their habitat in national wildlife areas and that could disturb migratory birds in a migratory bird sanctuary. Enforcement of these regulations is critical to the effective management of protected areas.

4.34 Environment Canada is responsible for enforcing all federal wildlife legislation, including the *Canada Wildlife Act*, *Migratory Birds Convention Act*, and *Species at Risk Act*. Designated

enforcement officers work cooperatively with managers of protected areas, and with other federal and provincial partners, to identify enforcement priorities.

The Department does not sufficiently enforce its regulations

4.35 In 2001, we observed that Environment Canada did not sufficiently enforce its regulations under the *Canada Wildlife Act* or the *Migratory Birds Convention Act* that pertain to national wildlife areas and migratory bird sanctuaries.

4.36 In this follow-up audit, we expected Environment Canada to be effectively enforcing the legislation and regulations across the entire protected areas network. We found that most areas in the network are not regularly patrolled or inspected. For example, while Wellers Bay National Wildlife Area has been identified as an enforcement priority in the Ontario Region due to the presence of unexploded munitions, it receives only five to six patrols per year. Despite posted warnings, local citizens make much illegal use of this area for camping and recreation. Other examples of enforcement problems identified by the Department include

- harmful uses by members of the public, such as trespassing, camping, and operating motorized vehicles and watercraft;
- illegal development and commercial exploitation, such as cattle grazing and wood harvesting;
- illegal trail and road building;
- illegal waste disposal; and
- poaching and live wildlife trafficking.

4.37 Enforcement problems are only sporadically addressed. Since 2002, Environment Canada has recorded limited **inspections** or **investigations** in response to violations under the *Canada Wildlife Act* or the *Migratory Bird Sanctuary Regulations*. Based on their experience, Department officials believe that a significant number of violations occur without any enforcement action being taken. Nonetheless, there is no systematic collection of **intelligence** to help target enforcement activity.

Inspection aims to ensure that acts and regulations are respected.

Investigation aims to gather evidence and information regarding alleged offences.

Intelligence aims to gather information to direct and support inspections and investigations.

Capacity and access are key barriers to effective enforcement

4.38 Our audit found two key barriers to effective enforcement: access and capacity. Wildlife enforcement officers are concentrated in urban areas. They visit some locations only once every 10 years. With few

exceptions, managers of protected areas are also infrequently on site and do not have the authority to enforce regulations. Although Environment Canada is piloting the use of satellite technology to monitor wildlife habitat and build intelligence in remote locations, it is currently difficult for enforcement officers to detect violations or rapidly respond to illegal activities in those areas.

4.39 A 2006 review of wildlife enforcement by Environment Canada found that the Department has allocated insufficient enforcement staff to visit all protected areas on a regular basis or to ensure a minimal level of compliance with regulations. In its 2007 Budget, the federal government increased funding for environmental enforcement. As a result, Environment Canada expects to hire close to 40 additional wildlife officers. However, the Department has estimated it needs at least double that increase to meet its legislated responsibilities.

4.40 Based on our examination, we conclude that Environment Canada is still not in a position to sufficiently enforce its regulations pertaining to national wildlife areas and migratory bird sanctuaries.

Monitoring and reporting on protected areas

4.41 Effective management requires that results be monitored and reported in relation to performance expectations. It is important to periodically monitor the state and management of protected areas in order to identify trends, review performance expectations, and take necessary corrective action to maintain ecological integrity.

The Department's monitoring of protected areas is limited

4.42 In 2001, we observed that Environment Canada had undertaken limited scientific research in its protected areas. The Department did not have comprehensive, up-to-date inventories of species living in national wildlife areas or in migratory bird sanctuaries, including species at risk. In this audit, we expected Environment Canada to have improved its monitoring of protected areas.

4.43 Environment Canada's *Protected Areas Manual* identifies monitoring and inventories as key management requirements. While inventories have been initiated to identify species at risk, Environment Canada still undertakes limited monitoring. Consequently, the Department lacks detailed knowledge of the species and habitats in most protected areas.



Cap Tourmente National Wildlife Area

4.44 For example, since 2002, Environment Canada has summarized existing knowledge of each of its national wildlife areas in the Quebec Region. However, information remains incomplete because sites in the region have not been adequately inventoried since they were established in the 1970s. Cap Tourmente National Wildlife Area is Quebec's best-known site, attracting more than 50,000 visitors each year. Although this site's migratory birds are monitored, knowledge of the area's plants, mammals, and fish is still incomplete.

Reporting to Parliament and the public is deficient

4.45 In 2001, we recommended that Environment Canada report regularly to the public on the state and management of its national wildlife areas and migratory bird sanctuaries. In this follow-up audit, we expected that Environment Canada would be reporting regularly on the state and management of its network.

4.46 Environment Canada's *Protected Areas Manual* includes a policy mandating both annual work planning and reporting. Neither is being carried out systematically. The Department has not established any performance expectations against which progress can be assessed, and no comprehensive annual report has as yet been released.

4.47 Through its central and regional websites, Environment Canada provides basic information to Canadians on its protected areas network. However, given the lack of performance expectations and monitoring, we are concerned that Parliament and Canadians are not receiving information about the state and management of protected areas. Progress on our recommendation is unsatisfactory (Exhibit 4.9).

4.48 In 2001, we found that there were several weaknesses in Environment Canada's management of national wildlife areas and migratory bird sanctuaries. In this follow-up audit, we found that the action the Department has taken to address these weaknesses, or to improve its management of protected areas, is limited (Exhibit 4.9). As a result, the ecological integrity of these protected areas is at risk.

Exhibit 4.9 Progress in addressing our recommendation and findings on federal protected areas is unsatisfactory

Recommendation	Progress
Environment Canada should report regularly to the public on the state of national wildlife areas and migratory bird sanctuaries in the basin. Areas for reporting would include the state of their environmental health, public access and use, scientific research, and enforcement activities. (2001 Report of the Commissioner of the Environment and Sustainable Development, Chapter 1, section 5.1.26)	Unsatisfactory
Findings	**Progress**
• Management plans are outdated. • Comprehensive, up-to-date inventories of species are lacking. • Monitoring and reporting of public access and use is limited. • Scientific research undertaken by the federal government is limited. • Regulations are not sufficiently enforced. • Environment Canada lacks the human and financial resources to manage protected areas effectively. (2001 Report of the Commissioner of the Environment and Sustainable Development, Chapter 1, see sections 5.3.11 and 5.3.12)	Unsatisfactory

Satisfactory—Progress is satisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation and findings were made.

Unsatisfactory—Progress is unsatisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation and findings were made.

4.49 Recommendation. Environment Canada should systematically assess its national wildlife areas and migratory bird sanctuaries to determine whether they are meeting the Department's criteria for protected areas and fulfilling their intended purpose. Based on its assessments, the Department should undertake timely action to maintain, restore, or delist sites as appropriate.

Environment Canada's response. Agreed. Environment Canada continues to implement measures to manage national wildlife areas and migratory bird sanctuaries. The Department has developed a strategic framework for the management of its network of 143 protected areas, and an operations manual that establishes policies and procedures for the effective management of these areas.

Environment Canada is currently undertaking a review of its protected areas in conserving wildlife and protecting migratory birds, their nests, eggs, and habitat. This review, to be completed in the summer of 2008, will also include consideration of more effective means of monitoring

and reporting on the state of these areas, and will help to inform necessary actions, contingent on available resources. An action plan with timelines will then be prepared during 2008–09, which will provide guidance for example on priorities for updated site management plans, site improvements, and delisting. In addition, Environment Canada will also update five site management plans during 2008–09. Full implementation of the action plan will be contingent upon available resources.

Conclusion

4.50 Environment Canada has made unsatisfactory progress in addressing our previous recommendations and observations on federal protected areas, both for the Great Lakes and St. Lawrence River basin and from a national perspective.

4.51 Although Environment Canada has prepared a manual for managing its protected areas, including a strategic framework, most of the elements have not been implemented. Most protected areas management plans are badly outdated. The expected conservation results are not monitored or reported.

4.52 Environment Canada does not sufficiently enforce its regulations under the *Canada Wildlife Act* or the *Migratory Birds Convention Act* as they pertain to national wildlife areas and migratory bird sanctuaries. Monitoring of public access to and use of protected areas is limited. Scientific monitoring and research is also limited, and there is insufficient scientific data available to quantify trends and risks to the ecological integrity of these sites. Reliable information available to Parliament or Canadians on the state and management of these protected areas is therefore limited.

4.53 Environment Canada's national wildlife areas and migratory bird sanctuaries form an extensive network that is intended to protect significant habitat and species. However, expectations for conservation are not balanced with resources. By its own analyses, Environment Canada has not allocated sufficient human or financial resources to effectively manage Canada's protected areas.

4.54 Environment Canada recognizes that the designation of an area as protected is not the end of the job, but the beginning. Canada's protected areas network may continue to deteriorate unless the Department takes concerted action to effectively manage sites and address threats to their ecological integrity.

About the Audit

Objective

The objective of this audit was to determine whether Environment Canada has made satisfactory progress in implementing recommendations and observations related to national wildlife areas and migratory bird sanctuaries that were made in Chapter 1 of our 2001 Report on the Great Lakes and St. Lawrence River Basin. We examined action taken by the Department to assess, monitor, maintain, and report on a national network of federally protected areas.

Scope and approach

Our audit covered the measures that Environment Canada has taken following the observations and recommendations on protected areas made in our 2001 audit, with a focus on two categories of protected area for which the Department has lead responsibility: national wildlife areas and migratory bird sanctuaries. Given that protected areas are managed as a national network, the scope of our audit included all sites in Canada.

In carrying out the audit, we interviewed Department officials and relevant stakeholders, and reviewed Department files, reports, and other supporting documentation. We also visited a sample of 20 protected areas from across Canada. We selected our sample to reflect the diversity of protected areas managed by Environment Canada, and to better understand the Department's conservation responsibilities for these sites.

Our audit did not follow up on recommendations made in our audit of Ecological Integrity in Canada's National Parks in the 2005 CESD Report, Chapter 2. While national parks are federally protected areas, they are not reserved for wildlife. In addition, insufficient time has lapsed for Parks Canada to implement those recommendations.

Criteria

The criteria for this audit were derived from the observations and recommendations related to protected areas in our 2001 Report on the Great Lakes and St. Lawrence River Basin. For this audit, we expected that for its protected areas, Environment Canada would be

- applying a strategic approach to management,
- developing and implementing management plans,
- effectively enforcing relevant legislation and regulations, and
- regularly monitoring and reporting on the state of its sites.

Progress on recommendations was assessed using the Office of the Auditor General's Guide to Assess Entity Progress.

Audit work completed

Audit work for this chapter was substantially completed on 9 July 2007.

Audit team

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Appendix List of recommendations

The following recommendation is found in Chapter 4. The number in front of the recommendation indicates the paragraph number where it appears in the chapter. The numbers in parentheses indicate the paragraph numbers where the topic is discussed.

Recommendation	Response
Applying a strategic approach	
4.49 Environment Canada should systematically assess its national wildlife areas and migratory bird sanctuaries to determine whether they are meeting the Department's criteria for protected areas and fulfilling their intended purpose. Based on its assessments, the Department should undertake timely action to maintain, restore, or delist sites as appropriate. **(4.19–4.48)**	Agreed. Environment Canada continues to implement measures to manage national wildlife areas and migratory bird sanctuaries. The Department has developed a strategic framework for the management of its network of 143 protected areas, and an operations manual that establishes policies and procedures for the effective management of these areas. Environment Canada is currently undertaking a review of its protected areas in conserving wildlife and protecting migratory birds, their nests, eggs, and habitat. This review, to be completed in the summer of 2008, will also include consideration of more effective means of monitoring and reporting on the state of these areas, and will help to inform necessary actions, contingent on available resources. An action plan with timelines will then be prepared during 2008–09, which will provide guidance for example on priorities for updated site management plans, site improvements, and delisting. In addition, Environment Canada will also update five site management plans during 2008–09. Full implementation of the action plan will be contingent upon available resources.

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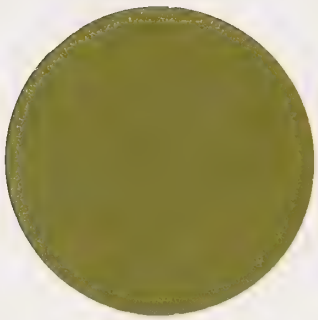
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Ecosystems

Chapter 5
Protection of Species at Risk

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The March 2008 Status Report of the Commissioner of the Environment and Sustainable Development comprises The Commissioner's Perspective—2008, Main Points—Chapters 1 to 14, Appendices, and 14 chapters. The main table of contents for the Report is found at the end of this publication.

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Chapter

5

Protection of Species at Risk

All of the audit work in this chapter was conducted in accordance with the standards for assurance engagements set by The Canadian Institute of Chartered Accountants. While the Office adopts these standards as the minimum requirement for our audits, we also draw upon the standards and practices of other disciplines.

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Ecosystems
Protection of Species at Risk

Main Points

What we examined

As of June 2007, there were 389 species in Canada listed as at risk on Schedule 1 of the *2002 Species at Risk Act*. Under the Act, the Minister of the Environment and the Minister of Fisheries and Oceans are responsible for preparing recovery strategies, action plans, and management plans for species at risk for which they are the competent minister.

In 2001, we found that there was a need for better baseline information to enable the government to effectively manage species at risk. We recommended that Environment Canada, Fisheries and Oceans Canada and Parks Canada develop a comprehensive inventory of species at risk under their jurisdiction and ensure that recovery strategies for these species be developed and implemented. The three organizations agreed with our recommendations.

Although our 2001 audit focused on activities in the Great Lakes—St. Lawrence River Basin, the three organizations manage their activities on a national basis and therefore, for this Status Report we examined progress made on our recommendation by the responsible departments from a national perspective. We also examined compliance with sections of the 2002 *Species at Risk Act,* which came into force after our last audit but which relate to our recommendations. These sections of the Act have specific and prescriptive requirements regarding recovery strategies.

Why it's important

Apart from its intrinsic value as part of Canada's natural heritage, Canada's biodiversity, including wild species of plants and animals, represents a vast storehouse of biological resources. The plants, mammals, and aquatic species found in ecosystems are interdependent and therefore maintaining ecological diversity is important to maintaining the health and integrity of the environment. Although it may go unnoticed by most people, the loss of one or two key species can have ripple effects across an ecosystem with potentially significant effects on our quality of life. According to various scientific sources, human activities in the twenty-first century have greatly increased the rate at which species are disappearing.

What we found

- Environment Canada and Fisheries and Oceans Canada have made unsatisfactory progress in responding to our 2001 recommendation relating to the development of a comprehensive inventory of species at risk, while Parks Canada has made satisfactory progress on this recommendation.
- The three organizations have made unsatisfactory progress in responding to our 2001 recommendation relating to the development of recovery strategies and have not complied with specific deadline requirements established by the *Species at Risk Act*. As of June 2007, recovery strategies should have been completed for 228 species at risk, but recovery strategies completed at that date address only 55 of those species.
- Departments and organizations are also required under the Act to identify to the extent possible, critical habitat necessary for the survival or recovery of species at risk. As of June 2007, critical habitat had been identified for 16 of the 228 species at risk for which recovery strategies were due.
- Despite the progress noted at Parks Canada, the federal government as a whole has made unsatisfactory progress in responding to our 2001 recommendations relating to the development of a comprehensive inventory of species at risk and of recovery strategies. While work is under way to develop appropriate data sharing agreements with third parties, such as provincial and territorial governments, and non-governmental organizations such as Nature Serve, inventory data collections vary across Canada. Ongoing improvements to data quality and data consistency are needed.

Introduction



Point Pelee National Park, Canada's smallest national park (15 square kilometres) is home to approximately 40 species at risk, more than in any other national park in Canada.

5.1 According to various scientific sources, Canada's wild animals and plants face unprecedented habitat degradation and destruction from human development activities. The growing number of invasive species in Canada is compounding these pressures. Invasive species compete with native species for territory and food and can change the ecology of the environment they occupy, thereby threatening native species. Other factors, such as harvesting, poaching, and diseases, also put pressure on native species. When animals, plants, insects, and other life forms can no longer find the food, clean water, shelter from predators, breeding sites, and climate that they need, their populations decline and some species disappear completely.

5.2 Responsibility for the protection and conservation of wildlife is shared between the federal and provincial and territorial governments. Each jurisdiction has passed laws to protect wildlife species. Coordinated efforts for protecting species at risk in Canada started more than three decades ago. In 1978, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) began assessing wildlife species and classifying them according to their perceived risk of extinction.

5.3 In 1988, the program for the Recovery of Nationally Endangered Wildlife in Canada (RENEW) was established as a cooperative response to the growing number of species at risk in Canada. The program involves federal, provincial, and territorial governments, as well as various stakeholders. In 1996, federal, provincial, and territorial governments signed the Accord for the Protection of Species at Risk and committed to protecting species at risk in their respective jurisdictions (Exhibit 5.1).

What we found in 2001

5.4 In 2001, we reported that there was no comprehensive inventory of species at risk on federal lands. As well, the federal government had not developed recovery strategies for almost half of the species known to be at risk.

Events since 2001

5.5 The Interdepartmental Recovery Fund, which provides financial resources to federal departments for implementing recovery activities for species at risk on federal lands or under federal jurisdiction, became operational in 2002.

Exhibit 5.1 **Milestones in protecting species at risk**

1978	The Committee on the Status of Endangered Wildlife in Canada began assessing wildlife species and classifying their chances of survival.
1988	The Wildlife Ministers' Council of Canada established RENEW, the program for the Recovery of Nationally Endangered Wildlife.
1992	Canada signed the United Nations Convention on Biological Diversity and committed to protecting endangered and threatened wildlife.
1996	The federal, provincial, and territorial governments endorsed the Accord for the Protection of Species at Risk, agreeing to develop laws and programs that would work together to protect species at risk and their habitat throughout the country.
1999	The Committee on the Status of Endangered Wildlife in Canada adopted updated criteria, based on criteria that the International Union for the Conservation of Nature had developed, to assess and classify wildlife species at risk.
2000	The Habitat Stewardship Program for Species at Risk became operational. It provides funding to citizens for implementing activities that protect or conserve habitat for species at risk.

Source: *Species at Risk Act: A Guide*, 2003

5.6 The *Species at Risk Act* was also passed in 2002 and came into force, for the most part, in 2003. Under the Act, species are listed under four risk levels: **extirpated**, **endangered**, **threatened**, or of **special concern**. The Act provides for the legal protection of species at risk, their residence, and their **critical habitat**, and is intended to

- prevent wildlife species from being extirpated or becoming extinct;
- provide for the recovery of wildlife species that are extirpated, endangered, or threatened as a result of human activity; and
- provide for the management of species of special concern to prevent them from becoming endangered or threatened.

5.7 The Act established the requirement for the responsible ministers to produce recovery strategies, including goals and objectives to improve the population status of listed species. The Committee on the Status of Endangered Wildlife in Canada continues, under the *Species at Risk Act*, to provide scientific assessments of the status of species. The number of species listed has increased from 233 in 2002 when Parliament passed the *Species at Risk Act*, to 389 in June 2007. In its 2000, 2003, and 2007 budgets, the federal government committed a total of $563 million to species at risk.

Definitions under the *Species at Risk Act*

Endangered species—A wildlife species that is facing imminent extirpation or extinction.

Extirpated species—A wildlife species that no longer exists in the wild in Canada, but exists elsewhere in the wild.

Species of special concern—A wildlife species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.

Threatened species—A wildlife species that is likely to become an endangered species if nothing is done to reverse the factors leading to its extirpation or extinction.

Critical habitat—The habitat that is necessary for the survival or recovery of a listed species and that is identified in a recovery strategy or an action plan as the species' critical habitat.

5.8 Under the Act, recovery strategies must include goals and objectives and identify the main types of activities to improve the species population status. Action plans must specify the activities required to meet the goals and objectives outlined in the recovery strategies. The development and implementation of recovery strategies require the involvement of many federal and provincial partners, as well as organizations outside government. As such, the Act recognizes the need for federal, provincial, and territorial legislation to work in a complementary fashion.

Federal role and responsibilities

5.9 Parks Canada is responsible for protecting species at risk in national parks and on other federal land it administers. Fisheries and Oceans Canada and Environment Canada carry more extensive responsibilities. Fisheries and Oceans Canada is responsible for protecting aquatic species at risk. Environment Canada is responsible for protecting migratory birds listed under the *Migratory Birds Convention Act* and species at risk on federal lands (except land administered by Parks Canada). Environment Canada is also responsible for the overall administration of the *Species at Risk Act* on behalf of the federal government, including coordination with provinces and territories.

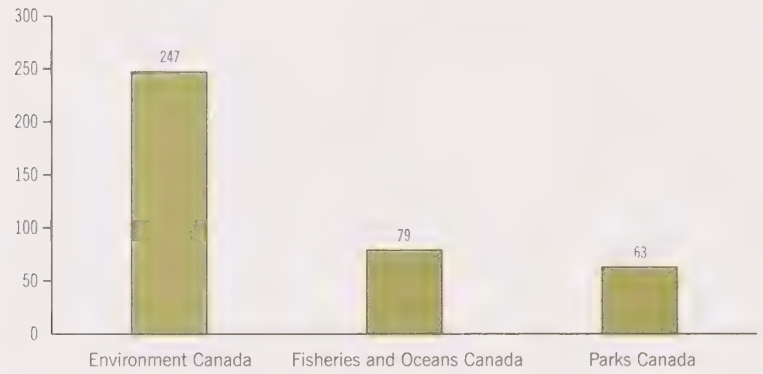
5.10 All three organizations are responsible for preparing recovery strategies for species that are under the endangered, extirpated, or threatened risk category and management plans for species under the special concern risk category and to report on their implementation. Of the 389 species at risk listed as of June 2007, Environment Canada is responsible for recovery strategies or management plans for 247 species, Fisheries and Oceans Canada for 79, and Parks Canada for 63 (Exhibit 5.2).

5.11 Provincial and territorial governments have jurisdiction and are responsible for the conservation of wildlife including species at risk on their lands. However, even if a province or territory leads the development of a recovery strategy, the federal ministers are ultimately responsible, under the *Species at Risk Act*, for ensuring that recovery strategies and management plans are completed on time and action plans are put in place as appropriate to implement the strategies.

5.12 Although this situation has never occurred, if the Minister of the Environment believes that a listed species—other than aquatic species or a species of migratory birds protected by the *Migrating Birds Convention Act*, 1994—its residence, or its critical habitat is not

effectively protected by provincial or territorial legislation or regulation, the Minister must recommend that the Governor in Council order the Act's protection measures to apply on private, provincial, or territorial lands. The Governor in Council then decides whether to act on the recommendation.

Exhibit 5.2 **The federal government is responsible for preparing recovery strategies or management plans for 389 species at risk**



Focus of the audit

5.13 The objective of this follow-up audit was to determine whether Environment Canada, Fisheries and Oceans Canada, and Parks Canada have made satisfactory progress implementing our 2001 recommendations concerning the development of a comprehensive inventory of species at risk, and the development and implementation of recovery strategies for those species. Since the *Species at Risk Act* came into force after our audit, setting prescriptive process and content requirements for recovery strategies, we also examined the federal government's compliance with the relevant sections of the Act. Although our 2001 audit focused on the departments' activities in the Great Lakes and St. Lawrence River Basin, (since species at risk are managed on a national basis), this follow-up audit examined the management of species at risk from a national perspective.

5.14 More details on the audit objective, scope, approach, and criteria are in About the Audit at the end of this chapter.

Observations

Species at risk inventory

Canadian Biodiversity Strategy—Canada's response to the United Nations Convention on Biological Diversity. The Strategy provides a framework for action at all levels that will enhance our ability to ensure the productivity, diversity, and integrity of our natural systems and, as a result, our ability as a nation to develop sustainably.

Source: The Canadian Biodiversity Strategy, 1995

There is no comprehensive inventory of species at risk

5.15 Although the *Species at Risk Act* does not specifically address inventories, the Canadian Biodiversity Strategy clearly indicates that comprehensive and reliable inventories are a fundamental requirement for the conservation of biodiversity, providing the foundation for, among other things, determining the status of species, conducting research, and developing resource and land use plans. Inventories provide essential baseline information for effective management of species.

5.16 In our 2001 audit, we recommended that Environment Canada, Fisheries and Oceans Canada, and Parks Canada (the Agency) should develop a comprehensive inventory of species at risk under their jurisdiction. The three organizations agreed with our recommendation and responded that they would continue to work with holders of data on species at risk to develop a database of information on these species. We expected to find that the organizations had developed, for species at risk under their jurisdiction, a comprehensive inventory, including information on abundance and distribution, and that they would know the extent to which it is complete. We found that the three organizations have made varying degrees of progress.

5.17 Through various funding agreements with third parties, inventory work for species at risk under Environment Canada's responsibility is being carried out. Although some information is available, officials from the Department could not provide us with evidence to demonstrate the completeness of the inventory for the 247 species at risk for which the Department must ensure that recovery strategies or management plans are prepared. Department officials told us that with the passage of the *Species at Risk Act*, which came into full force in 2004, it is not appropriate for Environment Canada to apply resources to a comprehensive inventory for all the species for which it now has accountabilities. The Department will conduct (or request others to conduct) inventories (including information on abundance and distribution) to the extent necessary to develop and implement action plans that follow from recovery strategies.

5.18 Fisheries and Oceans Canada carries out inventory work related to aquatic species. Most of this work is done in Fisheries and Oceans Canada regional offices. While we found that information on some aquatic species at risk exists, the Department did not provide us with

evidence that data on the 79 species at risk under its responsibility were readily available.

5.19 Parks Canada also carries out biodiversity and species at risk inventories in its national protected heritage areas. It has implemented processes to plan and prioritize work, and has created inventory systems, including standards and methodology, to collect, compile, and share data. The Agency has conducted inventories on most lands under its jurisdiction. It has an overall picture of the presence and location of species at risk on the lands it administers and is working toward completing and regularly updating the information. Since 2006, the Agency has made species at risk inventory information available on its website. We consider Parks Canada to have achieved satisfactory progress on this recommendation.

5.20 However, on a national basis, considering progress made by all three organizations, the federal government's progress has been unsatisfactory. There is no comprehensive inventory of species at risk to provide the baseline information needed for the development of science-based recovery strategies and action plans (Exhibit 5.3).

Exhibit 5.3 Progress on addressing our recommendation on developing a comprehensive inventory of species at risk is unsatisfactory

Recommendation	Progress
Environment Canada, Fisheries and Oceans [Canada] and Parks Canada should develop a comprehensive inventory of all species at risk under their jurisdiction. (2001 Report of the Commissioner of the Environment and Sustainable Development, Chapter 1, see section 5.1.24)	Unsatisfactory

Satisfactory—Progress is satisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation was made.

Unsatisfactory—Progress is unsatisfactory, given the significance and complexity of the issue and the time that has elapsed since the recommendation was made.

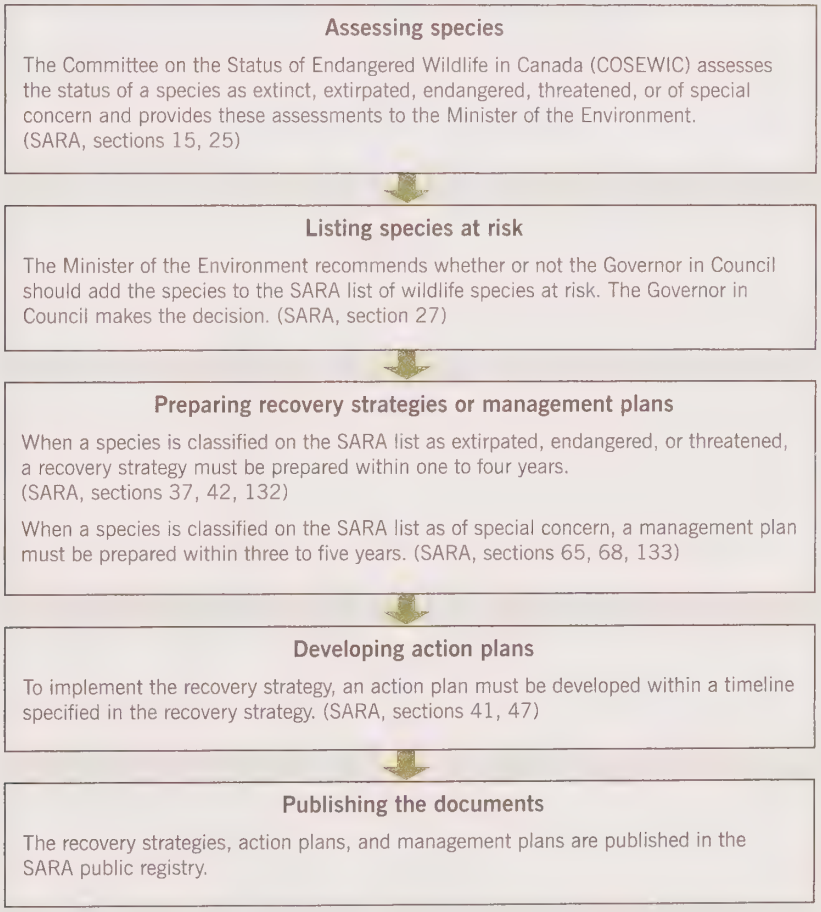
Recovery strategies and management plans

5.21 In our 2001 audit, we recommended that Environment Canada, Fisheries and Oceans Canada, and Parks Canada should ensure that recovery strategies developed for species at risk are implemented. The three organizations agreed with our recommendation. Since then, Parliament passed the *Species at Risk Act*, requiring the organizations to prepare recovery strategies for species that are under the endangered, extirpated, or threatened risk category and management plans for species under the special concern risk category, and to report on their implementation.

5.22 Recovery strategies and management plans must be prepared according to specific timelines and cooperation arrangements. The time allowed to produce the recovery strategies and management plans varies from one to five years, depending on when the species was listed under the Act and its risk category. We expected that the organizations would prepare recovery strategies and management plans in compliance with legal timeline requirements and cooperation arrangements (Exhibit 5.4).

5.23 A single recovery strategy can address more than one species at risk found in the same ecosystem, sharing a common threat, or belonging to the same scientific group of organisms. For example, three multi-species recovery strategies were developed covering a total of 20 species found in the Garry Oak Ecosystems in British Columbia. All three organizations develop multi-species recovery strategies where appropriate.

Exhibit 5.4 **Summary of the *Species at Risk Act* (SARA) recovery planning process**



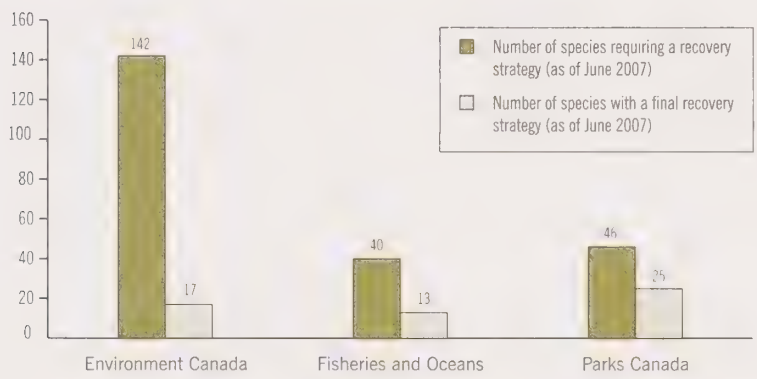
5.24 The three organizations have tools to track their progress in preparing recovery strategies and management plans. Parks Canada and Fisheries and Oceans Canada have developed specific internal guidelines and tools to ensure they produce recovery strategies in compliance with the Act. Environment Canada has yet to finalize its internal approach and guidelines.

Legislated deadlines are not being met

5.25 Under the Act, as of June 2007, completed recovery strategies were required for 228 species at risk. None of the three organizations met this requirement. In total, recovery strategies for 55 species were completed at that date. Parks Canada produced strategies for 54 percent of the species it is responsible for (25 out of 46), Fisheries and Oceans Canada produced strategies for 32 percent (13 out of 40), and Environment Canada for 12 percent (17 out of 142) (Exhibit 5.5).

5.26 New deadlines were approaching for additional recovery strategies. Under the Act, Environment Canada was required to complete recovery strategies or management plans for another 30 species by February 2008. Fisheries and Oceans Canada was required to complete recovery strategies for an additional seven species, and Parks Canada for an additional three.

Exhibit 5.5 Government departments did not meet the requirements for developing species at risk recovery strategies



National coordination is needed

5.27 The Act requires that recovery strategies be prepared in cooperation and consultation with many parties, including officials from one or more of the three federal organizations, other federal departments, the provinces and territories, wildlife management boards, Aboriginal organizations, and other interested parties such as species experts. Since management of many species falls under the responsibility of the province or territory, provinces or territories lead recovery teams in the preparation of approximately 75 percent of the recovery strategies for which Environment Canada is ultimately responsible for preparing.

5.28 Officials from all three organizations have indicated that the cooperation and consultation process often delays the completion of recovery strategies. According to department officials, a shared understanding of what constitutes "effective protection" under the Act, and the restrictions that could apply on provincial or territorial land with regards to protecting terrestrial species, is a key area requiring clearer definition. Officials from Environment Canada indicated the Department is developing a working definition of "effective protection." Clarifying the issue appears critical to providing provincial and territorial governments with more certainty.

5.29 Environment Canada has led the development of a National Framework for Species at Risk Conservation with core federal departments and provincial and territorial governments. This framework guides the involvement of those jurisdictions in the recovery planning process and is expected to facilitate delivery of recovery strategies and management plans on time. Federal, provincial, and territorial deputy ministers, representing the Canadian Councils of Resource Ministers, approved a draft document in June 2007, which is expected to guide decision-making across jurisdictions.

5.30 Under the Framework, policies will be developed in various areas, including recovery planning, which will encompass the identification of critical habitat and aspects of critical habitat protection. An interdepartmental committee, with members from the three responsible organizations, is developing this recovery planning policy.

5.31 Environment Canada is negotiating bilateral agreements with provinces and territories. Department officials told us that those agreements are expected to facilitate better cooperation. At the time of our examination, two bilateral agreements had been signed: one with British Columbia and one with Quebec. The federal government was about to sign a third agreement with Saskatchewan and was in the final stages of negotiations with Alberta, Yukon, the Northwest Territories, New Brunswick, and Prince Edward Island.

Critical habitat has not been identified

5.32 While other federal legislation can provide some protection for the habitat of species at risk, the *Species at Risk Act* protects critical habitat by prohibiting its destruction. The critical habitat of a species at risk is defined as the habitat that is necessary for its survival or recovery. That habitat can include breeding sites, nursery areas, and feeding grounds. Identification of critical habitat is a complex undertaking with potential implications for provinces, territories, Aboriginal people, industries, private landowners, and various land users.

5.33 As previously mentioned, of the 228 species at risk for which recovery strategies were required as of June 2007, recovery strategies were in place for 55. We expected that when developing recovery strategies, the organizations would have identified critical habitat to the extent possible, as required by the Act. However, critical habitat was identified for 4 of the 55 species for which a recovery strategy was completed. Critical habitat has been partially identified for another 12 species. A schedule of studies to conduct critical habitat identification was included in all recovery strategies.

5.34 Department officials mentioned the lack of scientific knowledge, such as information about the type of habitat that species require at various developmental stages and the size of habitat required to meet the recovery objectives, as the primary impediment to the identification of critical habitat when developing recovery strategies.

Action plans are still in their infancy

5.35 Action plans outline the activities required to meet the objectives set in the recovery strategies. A timeline for the development of each action plan is to be specified in each recovery strategy. As of June 2007, no action plans were due for the 55 species for which a recovery strategy had been produced. However, Parks

Canada had finalized one action plan and had started drafting another one. Environment Canada had started drafting eight plans and Fisheries and Oceans Canada had started drafting eighteen.

5.36 Although some recovery strategies have been completed and progress has been accomplished on the development of action plans, the three organizations have fallen far short of the deadlines specified by the Act for the preparation of recovery strategies. They have not made the progress we expected following our 2001 recommendation (Exhibit 5.6).

Exhibit 5.6 Progress on addressing our recommendation on developing and implementing recovery strategies for species at risk is unsatisfactory

Recommendation	Progress
Environment Canada, Fisheries and Oceans [Canada], and Parks Canada Agency should ensure that recovery strategies developed for species at risk are implemented. (2001 Report of the Commissioner of the Environment and Sustainable Development, Chapter 1, see section 5.1.25)	Unsatisfactory

Satisfactory—Progress is satisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation was made.

Unsatisfactory—Progress is unsatisfactory, given the significance and complexity of the issue and the time that has elapsed since the recommendation was made.

Recovery activities are taking place

5.37 Although many recovery strategies have not been completed, organizations are carrying out recovery activities. Many of these activities were initiated before the Act came into force and are being carried forward. They range from research, public awareness, and education, to control of human activities, protection of habitat, and reintroduction of species.

5.38 Parks Canada has established a systematic approach to manage its recovery activities supported by priority-based funding. Final reports due at the completion of projects allow the Agency to track results and collect data. The Agency reports some of its results on its website and in various departmental reports. Below is an example of one of its recovery activities:

- **Working with the community.** In Kejimkujik National Park in southern Nova Scotia, Parks Canada has developed a volunteer program where park visitors and local community members work with recovery scientists to help with recovery efforts. In the spring, park staff, researchers, and volunteers monitor Blanding's turtle

nesting sites. Once females lay their eggs, the nests are covered with enclosures to protect them from predators. In the fall, park staff and volunteers check nests daily and count, measure, and release hatchlings.

5.39 Fisheries and Oceans Canada has also taken action on a priority basis. The Department allocates funds, receives annual status reports from regional offices, and monitors progress. Below are two examples of its recovery activities:

- **Countering poaching.** In the Pacific Region, Fisheries and Oceans Canada has focused its enforcement efforts on preventing poaching of the northern abalone, a mollusc listed as threatened under the *Species at Risk Act*. An Abalone Coast Watch program, supported by First Nations communities and the Department's enforcement patrols, led to convictions for illegal possession and harvest of abalone.
- **Changing marine vessel traffic.** To protect the endangered North Atlantic right whale population from collisions with ships, new shipping lanes were put into operation in the Bay of Fundy in 2003. The new shipping lanes, resulting from a joint effort by Fisheries and Oceans Canada, Transport Canada, and the Canadian Whale Institute, are organized so that ships are now bypassing an area containing the largest number of the right whales.

5.40 Environment Canada does not have a systematic approach to planning and implementing recovery activities. Although the Department has been focusing its implementation activities on migratory birds, it has also initiated recovery activities for other species, such as the boreal felt lichen. Below is an example of the recovery activity Environment Canada has put in place:

- **Working with provinces.** Boreal felt lichen is a rare species found in two populations in Canada (Atlantic and Newfoundland), apparently the two last remaining populations in the world. The Atlantic population was designated endangered under the *Species at Risk Act* in 2005. Environment Canada, Nova Scotia, and New Brunswick completed a recovery strategy in June 2007. Evidence suggests that the rate of population growth is extremely slow and full recovery cannot be expected in this century.

5.41 Exhibit 5.7 highlights two other recovery actions that are under way, involving the two departments and the Agency.

Exhibit 5.7 **Examples of cooperation between multiple organizations**

The Whooping Crane (endangered)



Location. The natural nesting grounds of the whooping crane are almost entirely in Wood Buffalo National Park, which straddles the Alberta–Northwest Territories border. The flock migrates to the Texas Gulf Coast, where they winter in or near the Aransas National Wildlife Refuge.

Status. With fewer than 20 individuals, whooping cranes were on the verge of extinction in the early 1940s, according to the assessment of the Committee on the Status of Endangered Wildlife in Canada. In 1978, the Committee designated the whooping crane as endangered. Its status remained unchanged when re-evaluated in 2000. The whooping crane has been listed as endangered under the *Species at Risk Act* since 2003.

Recovery activities. Whooping cranes have been studied for decades. Recovery activities include protecting nesting grounds, public education, captive breeding, and reintroducing young birds into the wild.

Achievements. The Wood Buffalo/Aransas population increased by 35 percent from 1989 to 1999. Today, the wild Wood Buffalo/Aransas population is estimated at 237, but the species remains endangered. Recovery efforts have involved many American and Canadian partners.

Sources: Parks Canada, Environment Canada, Committee on the Status of Endangered Wildlife in Canada.

The Atlantic Salmon, Inner Bay of Fundy Population (endangered)



Location. This population of the Atlantic salmon spawns in rivers of Nova Scotia and New Brunswick that drain into the Bay of Fundy. After going to sea, these salmon remain in the Bay of Fundy.

Status. Over 30 years, this population has declined by more than 95 percent. In 2001, the Committee on the Status of Endangered Wildlife in Canada designated the Inner Bay of Fundy Atlantic salmon as endangered. The population has been listed as endangered under the *Species at Risk Act* since 2003.

Recovery activities. Recovery activities include preserving salmon genetic diversity through captive breeding, according to breeding plans involving representatives from each remaining genetic family.

Achievements. In 2003, fewer than 100 adults were estimated to have returned to rivers known to have contained the species. The population's status remained unchanged when re-evaluated in 2006. Recovery efforts have involved many partners, including Parks Canada, Fisheries and Oceans Canada, the Atlantic Salmon Federation, Fort Folly First Nation, and the University of New Brunswick.

Source: Parks Canada, Fisheries and Oceans Canada, Environment Canada, Committee on the Status of Endangered Wildlife in Canada, the Atlantic Salmon Federation.

Conclusion

5.42 The federal government's progress, considered here as the combined progress achieved by the three responsible organizations, in responding to our 2001 recommendations regarding the development of a comprehensive inventory and recovery strategies for species at risk, is unsatisfactory.

5.43 The federal government does not have a comprehensive inventory of species at risk on its land. The government is late in preparing recovery strategies and it has not finalized some of the guidance material needed to achieve the objectives of the *Species at Risk Act*. In our view, taking into account the rate of progress to date and the approaching deadlines for additional strategies, the government is at risk of falling further behind in preparing recovery strategies.

5.44 However, we have noted that Parks Canada has made satisfactory progress in developing an inventory of species at risk under its jurisdiction. Parks Canada and Fisheries and Oceans Canada have established structured approaches to manage recovery planning and implementation. As a result, we believe these organizations are in a better position to comply with the requirements of the Act.

5.45 Environment Canada is responsible for the largest number of species at risk in Canada. The Department is clearly behind in delivering on its responsibilities.

5.46 Environment Canada is also responsible for coordinating the efforts of federal, provincial, and territorial governments, and stakeholders. As such, it needs to provide national coordination. As the leader on the *Species at Risk Act*, the Department needs to clarify the implications of the Act for provincial, territorial, and private landowners and to finalize bilateral agreements with provinces and territories.

About the Audit

Objective

The objective of our follow-up audit was to determine whether Environment Canada, Fisheries and Oceans Canada, and Parks Canada have made satisfactory progress in implementing selected major recommendations from Chapter 1 of our 2001 Report on the Great Lakes and St. Lawrence River Basin. The recommendations concerned the need to develop and implement recovery strategies for species at risk under their jurisdiction.

Scope, and approach

Our audit work focused on measures that the three organizations have taken to address selected 2001 recommendations and the results they have achieved. Recommendations were selected based on their significance and interest to Parliament. Our examination did not include 2001 recommendations that related to the assessment of funding and Fisheries and Oceans Canada's role and responsibilities. Since species at risk are being managed as a national program, our scope for this follow-up audit is national.

Since our 2001 audit, the *Species at Risk Act (SARA)* was adopted, requiring the three organizations to prepare recovery strategies and action plans for extirpated, endangered, and threatened species and management plans for species of special concern. Consequently, we've considered the relevant sections of the *Species at Risk Act*. We assessed the performance of the federal government and not the performance of other levels of governments.

In carrying out the audit, we interviewed department officials and relevant stakeholders and reviewed and analyzed departmental files, including reports, databases, policies, and action plans.

Criteria

We used the following criteria to assess progress the three organizations made in developing and implementing recovery strategies for species at risk under their jurisdiction based on our 2001 recommendations and the *Species at Risk Act*. We expected Environment Canada, Fisheries and Oceans Canada, and Parks Canada to be

- developing and maintaining inventories of species at risk under their jurisdiction;
- preparing recovery strategies and management plans for the listed species at risk for which they are responsible (SARA, sections 37, 39, 41, 42, 65, 66, 68);
- preparing action plans to implement recovery strategies for species at risk for which they are responsible (SARA, sections 47, 48, 49); and
- implementing recovery actions.

Audit work completed

Audit work for this chapter was substantially completed on 30 June 2007.

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Status Report of the Commissioner of the Environment and Sustainable Development to the House of Commons—March 2008

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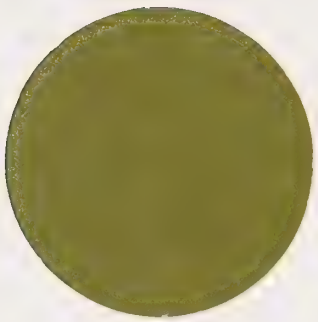
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Ecosystems

Chapter 6
Control of Aquatic Invasive Species

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The March 2008 Status Report of the Commissioner of the Environment and Sustainable Development comprises The Commissioner's Perspective—2008, Main Points—Chapters 1 to 14, Appendices, and 14 chapters. The main table of contents for the Report is found at the end of this publication.

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Chapter

6

Control of Aquatic Invasive Species

All of the audit work in this chapter was conducted in accordance with the standards for assurance engagements set by The Canadian Institute of Chartered Accountants. While the Office adopts these standards as the minimum requirement for our audits, we also draw upon the standards and practices of other disciplines.

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Ecosystems
Control of Aquatic Invasive Species

Main Points

What we examined

Aquatic invasive species include any aquatic organism whose introduction or spread can threaten the environment, the economy, or society, including human health. In its 1995 Canadian Biodiversity Strategy, the federal government committed to prevent, control, or eradicate invasive species that threaten Canada's ecosystems and economy, including aquatic invasive species.

In 2002, we audited the federal government's management of invasive species. We recommended that Fisheries and Oceans Canada, which is responsible for protecting fish and fish habitat in Canada, develop and implement a means to identify and assess the risks posed by aquatic invasive species and use it as a tool for setting priorities and objectives for prevention, eradication, or control of those risks. We also recommended that it put in place a monitoring and reporting system to track the effectiveness of actions taken toward its aquatic invasive species objectives and report annually on progress. The Department agreed with our recommendations and provided an expected completion date of fall 2003 for addressing them.

Since ship ballast water is a very important pathway for the introduction of aquatic invasive species and since Transport Canada is responsible for regulating and controlling ballast water on commercial ships in Canada, we recommended that Transport Canada define best management practices for ship ballast water and establish regulations requiring the application of those practices. We also recommended that it develop and implement a means to monitor, maintain records, and report annually on compliance. The Department accepted our recommendations and committed to regulating and monitoring ballast water accordingly.

This year, we carried out a follow-up audit to determine whether the two departments made satisfactory progress in response to our recommendations.

Why it's important

Aquatic invasive species can fundamentally change the environment they occupy and, by extension, affect its economic value in terms of beneficial uses. For example, invasive species can change a clear, open waterway into a weed-bed, or a sandy beach into a shell-encrusted hazard. Such changes have ripple effects that can disrupt or destroy the native ecology and existing recreational and commercial uses along with it.

Aside from its intrinsic value as part of Canada's natural heritage and beauty, biodiversity in the form of plant and animal life is the source of many "ecological goods and services" and, in that regard, it holds tremendous potential value. Experts have concluded that aquatic invasive species are second only to habitat destruction as a leading cause of biodiversity loss, including local extinctions of species. Studies to date indicate that they cause billions of dollars of damage to Canada's economy every year. For example, one study in 2006 estimated that damages caused by six aquatic invasive species alone cost more than $343 million a year. Currently, approximately 185 alien species have invaded the Great Lakes.

When the habitat of a commercially valuable species is destroyed or if an invader crowds it out by occupying its space or eating its food, the livelihoods of those relying on it are at risk. Sea lampreys, for example, have had a serious negative impact on the Great Lakes fishery. Their aggressive behaviour contributed significantly to the collapse of fish species such as trout, walleye, and sturgeon. Perhaps the most infamous aquatic invasive species in Canada is the zebra mussel, which is widely known to have caused biodiversity loss as well as direct economic costs to industry. For example, in 2002, Ontario Power Generation estimated that, as a direct result of the presence of zebra mussels, operating costs increased by $500,000 and $1 million per year at its Darlington and Pickering nuclear stations.

What we found

- Fisheries and Oceans Canada has made unsatisfactory progress in implementing our 2002 recommendations. While the Department has identified some aquatic invasive species that pose major risks to Canada and put in place biological risk assessment guidelines, the rate at which new alien species are becoming established is exceeding the rate at which the Department is assessing risks. The Department has failed to assess economic and social risks, and priorities and objectives for prevention, control, or eradication of risks posed by aquatic invasive species have not been set.

- In addition, Fisheries and Oceans Canada does not have plans or mechanisms in place for early detection of, or rapid response to, aquatic invasive species and is therefore unprepared to prevent, control, or eradicate potential new aquatic invasive species. It has not monitored or reported how effective its efforts have been at preventing, controlling, or eradicating the aquatic invasive species it has identified.
- Transport Canada has made satisfactory progress in implementing one of our 2002 recommendations. Mandatory regulations for the control and management of ballast water came into force through the *Canada Shipping Act* in 2006. These regulations constitute a major step forward in addressing the issue of aquatic invasive species. Ships entering Canadian waters are now required by law to take steps to manage ballast water to reduce the likelihood of introducing aquatic invasive species.
- Transport Canada has made unsatisfactory progress on our 2002 recommendation related to monitoring and reporting on compliance. While Transport Canada has developed the tools it needs and is gathering information on compliance with its regulations for ships entering the Great Lakes, gaps remain in the Department's compliance monitoring and reporting at the national level.
- We found that risks posed by aquatic invasive species have not been adequately assessed or effectively managed. The federal government is not yet in a position to prevent, control, or eradicate invasive species that pose the greatest threat to Canada's aquatic ecosystems and economy. Much remains to be done to meet commitments made in the federal government's 1995 Canadian Biodiversity Strategy.

Fisheries and Oceans Canada and Transport Canada have responded. Fisheries and Oceans Canada and Transport Canada agree with our recommendations. Their responses follow the related recommendations throughout the chapter.

Introduction

6.1 An aquatic invasive species is any aquatic organism whose introduction or spread can threaten the environment, including native fish and their habitat, the economy, or society, including human health. Referred to by some scientists as "biological pollution," these species can multiply and persist in the environment, crowding out native species and eating their food, reducing the numbers of commercially valuable species, and threatening the livelihoods of those relying on these species. Invaders may be introduced intentionally, for example, through the release of unwanted aquarium species, or unintentionally from sources such as ship and boat hulls or ballast water. Invaders may come from abroad or from other parts of Canada. According to the Canadian Council of Fisheries and Aquaculture Ministers, ballast water is a very important pathway by which aquatic invasive species enter Canadian waters.

6.2 According to Fisheries and Oceans Canada, aquatic invasive species are a large and growing problem in Canada. A 2006 study estimated that damages caused by six species alone cost more than $343 million a year.

Federal roles and responsibilities

6.3 At the federal level, two key departments share responsibilities for dealing with aquatic invasive species in Canadian waters. Fisheries and Oceans Canada has overall responsibility for conserving and protecting the fisheries resource, including the habitat in which fish live and the food on which they depend. Transport Canada is responsible for regulating and controlling how commercial ships manage their ballast water in order to prevent or reduce the release of foreign aquatic organisms from those ships.

What we found in 2002

6.4 In our 2002 audit on invasive species, we found that Fisheries and Oceans Canada had not established a coordinated national response to aquatic invasive species. The Department had not identified the aquatic invasive species that pose the greatest threats to Canada's freshwater and marine ecosystems or to the economy, nor the specific pathways by which they arrived. It had not assessed the relative risks posed by aquatic invasive species in order to set management priorities and it had not put in place the capability to monitor and report on the effectiveness of actions taken to prevent, control, or eradicate them.

6.5 Our 2002 audit also examined Transport Canada's effectiveness in preventing or reducing the release of foreign aquatic organisms from the ballast water of ships entering Canadian waters. We found that Transport Canada was not regulating and monitoring ballast water discharges as it had committed to do, nor was it reporting on the level of compliance with existing voluntary guidelines on ballast water exchange.

Events since 2002

6.6 **Calls for action on aquatic invasive species have continued.** Since our 2002 audit, the House of Commons Standing Committee on Fisheries and Oceans has issued two reports on aquatic invasive species, in 2003 and 2005. Due to the rising numbers of aquatic alien species in the Great Lakes, which border Canada and the United States, there have also been international efforts to deal with the issue. The United States Government Accountability Office (our counterpart in the United States) and the International Joint Commission (an independent organization established to help prevent and resolve disputes over boundary waters between Canada and the United States) have also continued to raise concerns about aquatic invasive species.

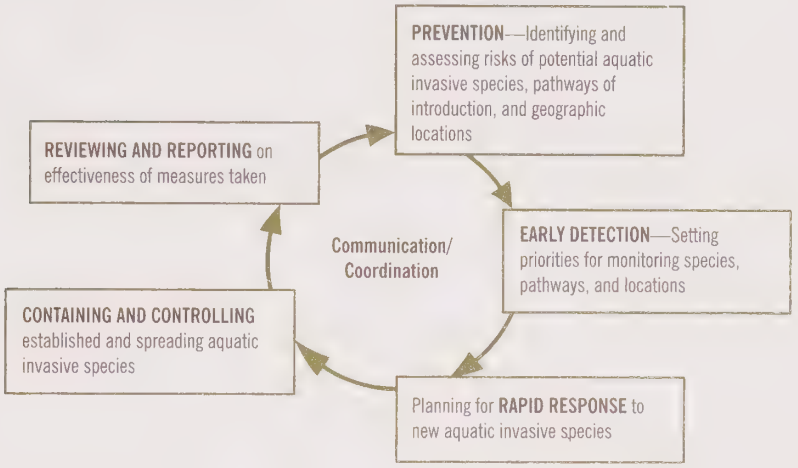
Alien species---a species introduced outside its normal past or present habitat. It includes any part, seeds, or eggs that might survive and subsequently reproduce.

Source: Conference of the Parties to the United Nations Convention on Biological Diversity

6.7 **New strategies and plans were released.** In 2004, the federal government issued an Invasive Alien Species Strategy for Canada, restating the government's primary goal of preventing the introduction of aquatic invasive species, as defined in its 1995 Canadian Biodiversity Strategy. Exhibit 6.1, adapted from the Invasive Alien Species Strategy, summarizes the government's approach to the management of aquatic invasive species. The 2004 strategy included a commitment to develop the Canadian Action Plan to Address the Threat of Aquatic Invasive Species. The government's ultimate goal as stated in the Plan is to "minimize (and ideally eliminate) the introduction of harmful aquatic invasive species and remediate the impact of those already in Canada."

6.8 Budget 2005 contained commitments to allocate $85 million over five years to combat invasive species, including $20 million over five years for aquatic invasive species. Half of the funds available to manage aquatic invasive species—$2 million per year—will supplement Canada's existing contribution to controlling one species: the sea lamprey. With the additional funds, Canada's contribution to that control program now stands at $8.1 million per year. The remaining $2 million per year will be used to implement the Canadian action plan to address the threat of all other aquatic invasive species.

Exhibit 6.1 Approach to addressing aquatic invasive species, as adapted from the Invasive Alien Species Strategy for Canada (2004)



"Invasive marine species are one of the four greatest threats to the world's oceans! Unlike other forms of marine pollution, such as oil spills, where ameliorative action can be taken and from which the environment will eventually recover, the impacts of invasive marine species are most often irreversible!"

Source: International Maritime Organization (2007)

6.9 An international convention on ballast water has been adopted by the United Nations. In 2004, the International Maritime Organization (IMO), a United Nations agency concerned with the safety of shipping and cleaner oceans, adopted the International Convention for the Control and Management of Ships' Ballast Water and Sediments. The convention, which is expected to come into force in 2009, will define a ballast water treatment standard that would place limits on the number of organisms that ships could discharge in their ballast. To enter into force, the convention must be ratified by at least 30 countries constituting at least 35 percent of the gross tonnage of the world's merchant shipping.

6.10 At the time of our audit, 10 countries had ratified the convention; Canada had not. Transport Canada officials told us there are various reasons why Canada cannot yet ratify the convention, including the uncertainty of what measures will be taken by the United States, the need for consensus among federal departments on the merits of the IMO-approved treatment systems for use in Canada, and the need to determine whether any ships on Canadian domestic voyages should be required to fit treatment systems.

6.11 Ballast Water Control and Management Regulations were established in 2006. Mandatory ballast water control and management regulations came into force through the *Canada Shipping Act* in 2006. These regulations formalize ballast exchange guidelines in place since 1989, which had been voluntary. The regulations apply to

ships entering waters under Canadian jurisdiction and require them to manage their ballast water to reduce the likelihood of introducing aquatic alien species.

Focus of the audit

6.12 The objective of our follow-up audit was to determine whether Fisheries and Oceans Canada and Transport Canada had made satisfactory progress in implementing selected recommendations we made in our 2002 report on invasive species. More specifically, we examined whether Fisheries and Oceans Canada identified and assessed the risks posed by aquatic invasive species in order to set management priorities and objectives. We also examined whether Fisheries and Oceans Canada put in place a monitoring and reporting system to track the effectiveness of actions taken toward its objectives and to report annually on progress.

6.13 We also examined whether Transport Canada ensured that there is regulation and enforcement to control the introduction of aquatic alien species into Canadian waters from ship ballast water, and had implemented a means to monitor and report on compliance with the regulation.

6.14 More details on the audit objectives, scope, approach, and criteria are in **About the Audit** at the end of this chapter.

Observations and Recommendations

Managing the risks posed by aquatic invasive species

6.15 In our 2001 audit on the Great Lakes and St. Lawrence River basin, we said that Fisheries and Oceans Canada was not meeting its commitments made in the 1992 United Nations Convention on Biological Diversity and in the federal government's subsequent 1995 Canadian Biodiversity Strategy. Both documents commit the government to preventing, controlling, or eradicating aquatic invasive species.

6.16 In our 2002 audit on aquatic invasive species, we said that to assure Canadians that it is responding effectively to the problem of invasive species, the federal government needs to know three key things:

- what aquatic invasive species pose the greatest risks to Canadian ecosystems, habitats, or species and by what major pathways they arrive;

- who is taking what action to respond to major risks; and
- how effective those actions have been at eliminating or reducing adverse effects to acceptable levels so the government can determine whether programs are working or whether corrective measures are required.

We found that the government did not have this information. We recommended then that Fisheries and Oceans Canada identify the aquatic invasive species that pose the greatest risks to Canada's ecosystems and economy and use its analyses to set priorities and objectives for their prevention, control, or eradication. We also recommended it monitor and annually report on the effectiveness of its control measures. The Department agreed with our recommendations and provided an expected completion date of fall 2003 for addressing them. We therefore expected that Fisheries and Oceans Canada would have identified and assessed the risks posed by aquatic invasive species and used this information to set departmental priorities and objectives for prevention, control, or eradication, and that it would have reported annually on the effectiveness of its actions.

Research on risk has recently started

6.17 Fisheries and Oceans Canada has begun risk assessment on certain species and pathways. In 2006, the Department's new Centre of Expertise for Aquatic Risk Assessment drafted national guidelines for assessing the risk of aquatic invasive species in Canada. Such assessments involve estimating the likelihood of a species being introduced, and the biological risks or consequences. At the time of our audit, the Department had completed six biological risk assessments, had five others completed in a draft form, and planned eight more in 2008, for a total of nineteen.

6.18 In our 2001 audit on the Great Lakes and St. Lawrence River basin, we reported that Fisheries and Oceans Canada had not assessed the relative significance of non-ballast water pathways of aquatic alien species, such as the live food fish, aquarium, and bait fish industries (Exhibit 6.2). During the course of this follow-up audit, risk assessment work on these other pathways was only beginning.

6.19 Since our last audit, the number of aquatic alien species known to be in the Great Lakes alone has climbed from 160 to approximately 185. Given the current pace of work, Fisheries and Oceans risks falling further behind in assessing the biological risks posed by aquatic invasive species.

Exhibit 6.2 **Pathways of invasion by aquatic alien species**

Intentional introductions	Unintentional introductions
• Live food fish (live fish sold for food and sometimes released into waters as part of cultural traditions) • Aquarium and horticultural pond trade • Live bait fish • Authorized fish stocking • Unauthorized fish transfer or stocking	• Commercial shipping: ballast water management, hull fouling (where invasive species attach themselves to ship hulls) • Recreation/tourism: boating, float planes • Garbage • Water diversions, canals, and dams • Natural transboundary spread

Source: An Invasive Alien Species Strategy for Canada (2004)

6.20 Moreover, Fisheries and Oceans Canada has not assessed the socio-economic risks posed by aquatic invasive species in order to estimate the overall risks. Without that analysis, the Department lacks key information necessary to set priorities or establish risk-based objectives.

Ability to respond rapidly is not in place

6.21 The federal government has long acknowledged that prevention is the most economical and effective option for addressing aquatic invasive species. However, according to the government's 2004 Invasive Alien Species Strategy, "When invasive alien species circumvent prevention measures and enter Canada, it is essential to respond rapidly before—or immediately after—they become established and spread…" In addition to good information on high-risk species and pathways of entry, responding rapidly to aquatic invasive species requires monitoring and early detection. To be effective, rapid response plans should be in place before a crisis occurs so decisions and actions can be taken quickly.

6.22 Although the government's Invasive Alien Species Strategy calls for such plans, Fisheries and Oceans Canada has no concrete plan in place for responding rapidly to new aquatic invasive species on a national basis. The Department did, however, carry out one pilot project for a species of invasive tunicates in the Gulf of St. Lawrence region (Exhibit 6.3). Fisheries and Oceans Canada held regional workshops in 2006 with the aim of setting monitoring priorities. As a result, some priorities have been defined, but the Department has yet to implement a comprehensive national monitoring program. The Department cannot yet detect the introduction of invasive species in a timely manner and respond rapidly.

Exhibit 6.3 Mussels aquaculture is affected by invaders in Prince Edward Island

Tunicates are small marine animals that have a sac-like body and live by attaching to rocks or other structures in shallow water. Clubbed tunicates grow in dense clumps and interfere with the settlement of oyster and mussel larvae, and are therefore a serious pest to aquaculture. Seafood processors have started to charge mussel growers a surcharge to process affected mussels because of the extra effort involved in removing the tunicates. Five species have been observed in Canada, including the clubbed tunicate, as shown in the photo.



Mussel lines covered by invasive tunicates.

The clubbed tunicate, found in its native western Pacific coast, was the first invasive tunicate species found in Prince Edward Island waters, where it was discovered in the Brudenell River in January 1998.

Fisheries and Oceans Canada has funded research into rapid response and mitigation measures for dealing with invasive tunicates. The Department also established committees to coordinate work with provincial fisheries and aquaculture ministries and protocols to outline the minimum requirements for operating in tunicate-infested areas. At the time of our audit, a risk assessment on invasive tunicates was being coordinated by the Department's Centre of Expertise for Aquatic Risk Assessment.

6.23 Recommendation. Fisheries and Oceans Canada should apply a systematic risk-based approach to early detection and develop the ability to respond rapidly when new invasive species are detected in order to prevent them from becoming established or to control them.

Fisheries and Oceans Canada's response. Agreed. Fisheries and Oceans Canada acknowledges the need for a systematic, risk-based approach to early detection and rapid response and therefore accepts this recommendation.

Risk assessment is the foundation of a risk-based approach to any management program and aquatic invasive species are no exception. Since Budget 2005, when the Department received an annual budget of $2 million, the Department has put in place the building blocks to establish a systematic risk-based approach and has been working with Canadians to mitigate the impacts of aquatic invasive species.

One of the critical building blocks has been the creation of the Centre of Expertise for Aquatic Risk Assessment (CEARA). CEARA assesses the risk of existing and potential aquatic invasive species and their introduction pathways to guide other program activities.

With regard to a rapid response capacity, the Department alerts stakeholders and other jurisdictions in a timely fashion when a new nonindigenous species is discovered. The Department provides them with advice on appropriate response measures when required.

In response to this recommendation and to the extent permitted by current budgets, the Department will build upon its existing risk assessment, scientific research, and monitoring activities to implement a formalized risk-based approach to early detection of and rapid response to aquatic invasive species in partnership with other jurisdictions and stakeholders.

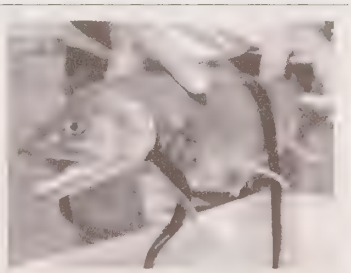
A control program has been developed for only one species

6.24 The only formal aquatic invasive species control program in place is for sea lamprey in the Great Lakes. Established in 1955, the Sea Lamprey Control Program is now a $21-million-a-year joint venture managed by the Great Lakes Fishery Commission in cooperation with Fisheries and Oceans Canada, the United States Fish and Wildlife Service, and the United States Army Corps of Engineers (Exhibit 6.4). Canada's contribution to this program is now $8.1 million annually (see paragraph 6.8).

6.25 As the sea lamprey program illustrates, given sufficient funds, containment and control measures can slow the spread of aquatic invasive species and reduce their impacts even when they have become established. Fisheries and Oceans Canada officials told us that there is no mitigation or operational response capacity in place, aside from the sea lamprey program.

6.26 Although we recognize the Department's risk assessment guidelines were an important step forward, based on our findings, the Department's progress on establishing risk-based priorities and

Exhibit 6.4 Sea Lamprey Control Program in the Great Lakes



- Sea lampreys (pictured attaching themselves to a fish) are native to the Atlantic Ocean and were first observed in Lake Ontario in the 1830s. In 1921, sea lampreys spread into Lake Erie via the Welland Canal. By the late 1940s, sea lamprey populations had exploded in all of the Great Lakes, causing damage to lake trout and other fish species populations.
- The 1954 Convention on Great Lakes Fisheries, signed by the United States and Canada, created the Great Lakes Fishery Commission and gave it a mandate to formulate and implement a sea lamprey control program.
- The Sea Lamprey Control Program is widely touted as a success story: it has resulted in a 90 percent reduction of sea lamprey populations in most of the Great Lakes.

Source: Great Lakes Fishery Commission (2000 and 2007)

objectives for active prevention and control of aquatic invasive species has been unsatisfactory (Exhibit 6.5).

Weaknesses in monitoring and reporting on effectiveness remain

6.27 In our 2002 report, we recommended that Fisheries and Oceans Canada monitor and report on the effectiveness of measures taken to prevent, control, or eradicate aquatic invasive species. The Department agreed with our 2002 recommendation. We therefore expected that it would have put in place a monitoring and reporting system and that it would be reporting regularly on the effectiveness of measures taken.

6.28 Both the 2003 and 2005 reports on aquatic invasive species of the Standing Committee on Fisheries and Oceans reinforced our 2002 recommendation. In its response to the committee, the Department said it would report its progress in its future annual Report on Plans and Priorities and Departmental Performance Report.

6.29 Although Fisheries and Oceans Canada's 2005–06 Departmental Performance Report lists three related activities—providing internal advice on the development of a regulatory framework for aquatic invasive species, supporting the establishment of a research network, and conducting research and monitoring projects—it does not provide a progress report on the issues raised in our 2002 audit or by the Standing Committee on Fisheries and Oceans. The Department has yet to put in place a monitoring and reporting system.

6.30 In its 2005 report, the Standing Committee on Fisheries and Oceans also recommended that a central repository of aquatic invasive species research be established. In its response, as well as in its 2004–05 Departmental Performance Report, Fisheries and Oceans

Exhibit 6.5 Progress in addressing our recommendation on managing the risks of aquatic invasive species is unsatisfactory

Recommendation	Progress
Fisheries and Oceans Canada should develop and implement a means to identify and assess the risks of aquatic invasive species and use it as a tool for setting departmental priorities and objectives for the prevention, control, or eradication of those risks. (2002 Report of the Commissioner of the Environment and Sustainable Development, Chapter 4, paragraph 4.70)	Unsatisfactory

Satisfactory—Progress is satisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation was made.

Unsatisfactory—Progress is unsatisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation was made.

Canada reported that it was developing an aquatic invasive species database to share information nationally. However, at the time of our audit, no such database was publicly available. Without a central repository for aquatic invasive species research, effective sharing of existing scientific data is constrained (Exhibit 6.6).

Exhibit 6.6 Progress in addressing our recommendation on monitoring and reporting is unsatisfactory

Recommendation	Progress
Fisheries and Oceans Canada should put in place a monitoring and reporting system to track the effectiveness of measures taken toward its invasive species objectives and should report its progress annually. (2002 Report of the Commissioner of the Environment and Sustainable Development, Chapter 4, paragraph 4.71)	Unsatisfactory

Satisfactory—Progress is satisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation was made.

Unsatisfactory—Progress is unsatisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation was made.

Managing ballast water

6.31 Ballast water is water carried by ships to ensure stability and structural integrity (Exhibit 6.7). If a ship does not have cargo on board to stabilize it, ballast water is pumped into on-board tanks for stability and safety. While taking on ballast water, the ship will also take on a variety of aquatic organisms, including micro-organisms, algae, plants, and even small fish. Ships pump out their ballast tanks, along with any organisms in the water, at the ports where they load cargo. The volume of ballast water transferred around the world is estimated at 3 to 5 billion tonnes per year (enough water to fill 1,200 to 2,000 Olympic-sized pools). It is estimated that at least 7,000 different species are being carried in ships' ballast tanks around the world. Not all will become aquatic invasive species, but some will: ballast water is one of the major pathways of introduction for aquatic invasive species.

6.32 Since 1980, the federal government has been considering how best to deal with ballast water. Between 70 to 75 percent of aquatic alien species in the Great Lakes are attributed to ballast water. Responding to the 1988 discovery of zebra mussels in Lake St. Clair, part of the Lake Erie basin, Transport Canada published voluntary guidelines in 1989 for the control of ballast water from ships entering the St. Lawrence River and the Great Lakes.

Ballast Water Control and Management Regulations are now in place

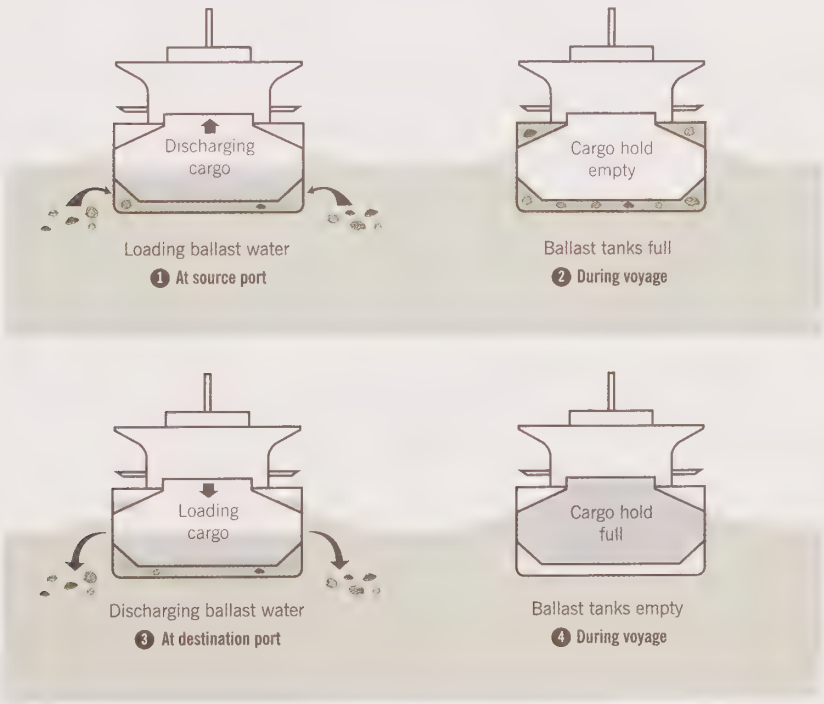
6.33 In our 2002 audit, we recommended that Transport Canada define best management practices for ship ballast water and establish

regulations to require all ships entering Canadian waters to follow those practices. The Department agreed with our recommendations; we therefore expected that it would have defined best management practices for ballast water and that ballast water regulations would be in place requiring those practices on all ships entering Canadian waters.

6.34 The Mandatory Ballast Water Control and Management Regulations, which formalized the voluntary 1989 guidelines, came into force in June 2006. The new regulations are a major step forward, as ships entering Canadian waters are now required by law to manage their ballast water to reduce the chance of introducing aquatic invasive species. Four options for managing ballast water are provided for in the regulations:

- Ballast water exchange: This procedure exchanges freshwater for seawater. It is intended to flush organisms out of the tanks, reduce sediment accumulation, and kill freshwater organisms by exposing them to saltwater. Ships are required to proceed to the exchange before entering Canadian waters.

Exhibit 6.7 Cross-section of ships showing ballast tanks and ballast water cycle



Source: Global Environmental Fund, United Nations Development Program, International Maritime Organization, Global Ballast Water Management Program, 2007

- Ballast water treatment: Such systems are still under development, but could include chemical (for example, ozone) or physical (for example, heat or filtration) systems.

- Retaining ballast water on board: This can be used when circumstances prevent the ship from using other management options.

- Discharging ballast water to a reception facility that can receive, store, or process ballast water to manage it.

The 2006 regulations also define "alternative exchange zones," to be used by ships to manage ballast water that was not exchanged outside Canada's 200-mile limit of sovereignty. The identification of these zones was based on peer-reviewed science advice from Fisheries and Oceans Canada.

6.35 Ships unable to apply the management procedures to their ballast water are required to notify Transport Canada at least 96 hours before they enter Canadian waters. In this event, ship captains are obliged to consult with Department officials to identify alternative measures to reduce the chance of introducing alien species, such as keeping the ballast water on board the ship.

6.36 Ships declaring no ballast on board are also capable of transporting alien species since they still carry residual amounts of ballast water and sediment in their ballast tanks. Ships intending to take on ballast in tanks containing residual ballast water and subsequently discharge it in Canadian waters must also ensure they have followed best management practices as prescribed by the Ballast Water Control and Management Regulations.

6.37 The Department has made satisfactory progress in addressing our 2002 recommendation to establish a regulation to better control the introduction of alien species through ballast water (Exhibit 6.8).

6.38 Although the 2006 regulations were a major step forward, the Department still lacks a standard to assess whether or not alien species have been effectively eliminated from the tanks of ships that have *exchanged* their ballast water as required by the regulation. While the regulations specify a standard for the presence of living organisms in *treated* ballast water, there is no process for approving treatment technologies and the Department does not have the means to test for compliance with its treatment standard.

Exhibit 6.8 Progress in addressing our recommendation on establishing ballast water regulations is satisfactory

Recommendation	Progress
Transport Canada should define best management practices for ship ballast and establish regulations requiring application of those practices on all ships entering Canadian waters. (2002 Report of the Commissioner of the Environment and Sustainable Development, Chapter 4, paragraph 4.81)	Satisfactory

Satisfactory—Progress is satisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation was made.

Unsatisfactory—Progress is unsatisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation was made.

Weaknesses in monitoring compliance remain

6.39 In 2002, we also recommended that Transport Canada develop and implement a means to monitor, maintain records, and report on compliance with any future Canadian ballast water regulations. The Department agreed with our recommendation. We therefore expected that it would have put in place a monitoring and reporting system and that it would have reported on compliance with the Canadian ballast water regulations on a national basis.

6.40 In 2005, the Standing Committee on Fisheries and Oceans recommended that a tracking system for ships in transit be created to monitor compliance with the ballast water management program. Transport Canada committed to working with the Canadian Coast Guard and the United States Coast Guard to develop such a system. At the time of our audit, the system was still in development.

There are shortcomings in the federal compliance program

6.41 Transport Canada monitors compliance with its regulations primarily through the examination of ballast water reporting forms received from incoming vessels and through on-board ship inspection, including testing the salinity of water in ballast tanks to confirm exchange at sea. The Ballast Water Reporting Form describes the ship's ballast water management activities. These forms are sent to Transport Canada, where they are to be entered into the Canadian Ballast Water Database. Our audit found the following shortcomings with this information:

- Though submission of the form is mandatory under the regulations, not all ships have been submitting them. For example, between January and April 2007, in the Atlantic Region,

1,029 ships arrived into port, with 960 (93 percent) submitting ballast water reporting forms.

- Of the ships that do submit the forms, important information is sometimes missing. For example, a ship may not report how many ballast tanks in total it has, or where it has discharged or intends to discharge the ballast water it carries.

- Despite the requirement for ships to submit ballast water reporting forms and for Transport Canada to monitor and report this information in a central database, weaknesses exist in ensuring the completeness and accuracy of ballast water information.

- Missing entries in the Canadian ballast water database make it difficult to determine whether the original form was incomplete, entered incorrectly, or not applicable (in the case where ships do not intend to discharge).

6.42 The Department has set targets for ship inspection that differ depending on the point of entry into Canada. According to Transport Canada officials, all vessels (100 percent) entering the Great Lakes through the St. Lawrence Seaway are inspected, whereas the inspection target for ships entering Canadian waters on the east or west coasts is set at 25 percent. Numbers obtained from the Department's west coast office indicate that between January and September 2007, inspections were carried out on about 7 percent of ships. For the east coast, since inspections started in October 2007, that information was not available for our examination. Therefore, we concluded that the Department has yet to achieve its inspection target of 25 percent on the east and west coasts.

6.43 Department officials told us that new funds received in the fall of 2007 as part of the federal Health of the Oceans Initiative, announced in October 2007, should allow the Department to meet the 25 percent inspection target on the two coasts. Officials also told us that a database being developed for implementation in 2008 will address the issue of the availability of inspection information.

Compliance varies and data is incomplete

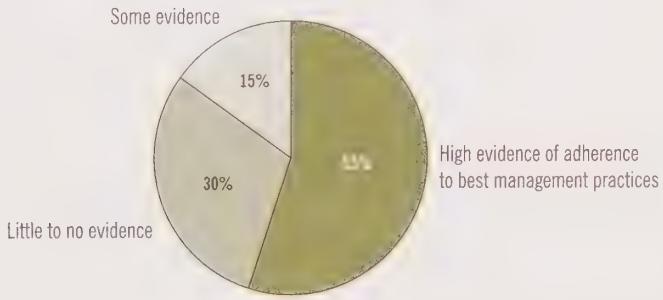
6.44 Testing the salinity of ship ballast water is the principal method Transport Canada uses to ensure that ships have carried out ballast water exchange at sea. Results from the inspections carried out by the Canada–United States Joint Ballast Water Management Exam Program on vessels entering the Great Lakes through the St. Lawrence

Seaway between April and December 2006 indicate that 94 percent of ballast tanks tested satisfied the exchange salinity test.

6.45 In addition to testing the salinity, the Department looks at evidence that a vessel has followed best management practices, such as an updated ballast water management plan and record-keeping log book, including reporting forms. According to Transport Canada, of the 146 ships inspected in the Great Lakes by the Canada–United States Joint Ballast Water Management Exam Program between June and December 2006, 52 (36 percent) were issued "instruction letters." These letters are issued to vessels that do not comply with the regulations and that may be ordered not to discharge their ballast in Canadian waters.

6.46 Transport Canada and its partners started to inspect no ballast on board vessels (NOBOB) in 2005. Approximately 80 percent of vessels entering the Great Lakes have no ballast on board. Results from a 2006 report by the Canada–U.S. Joint Ballast Water Management Exam Program for the Great Lakes indicate that during that year, only about half of NOBOB vessels followed best management practices (Exhibit 6.9). Department officials told us that the situation was improving in 2007 but were unable to provide us with the supporting documentation at the time of our audit.

Exhibit 6.9 Only about half of ships declaring no ballast on board followed best management practices in 2006 in the Great Lakes



Source: 2006 Summary of Great Lakes Ballast Water Management Exams

6.47 High-risk ships are known, but not always targeted for inspection. Since our 2002 audit, Transport Canada has completed risk assessments to determine which Canadian ports are most at risk from aquatic invasive species, and from which international ports alien species are most likely to come. Identifying those ports was a good first step. However, the Department does not systematically inspect vessels

coming from the high-risk ports it identified. As a result, except for the Great Lakes, the Department is not applying a systematic risk-based approach to monitoring compliance with its regulations. Significant risks could be left unmanaged.

6.48 Although Transport Canada has started to monitor compliance with Canada's ballast water regulations, the data the Department had collected was incomplete and unreliable. The Department is not yet in a position to report on compliance with Canada's ballast water regulations on a national basis. Progress on our recommendation has been unsatisfactory (Exhibit 6.10).

Exhibit 6.10 Progress in addressing our recommendation on monitoring and reporting on compliance is unsatisfactory

Recommendation	Progress
Transport Canada should develop and implement a means to monitor, maintain records, and report on compliance with any future Canadian ballast water regulations. (2002 Report of the Commissioner of the Environment and Sustainable Development, Chapter 4, paragraph 4.65)	Unsatisfactory

Satisfactory—Progress is satisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation was made.

Unsatisfactory—Progress is unsatisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation was made.

6.49 Recommendation. Transport Canada should ensure that ships entering Canadian waters from high-risk locations are appropriately and systematically monitored and that ballast water management practices applied by these ships comply with Canadian regulations.

Transport Canada's response. Agreed. We are acting on this by launching a database of ecosystem data of the world's ports. This will identify ships arriving from ports with a higher risk of carrying species that would be invasive for Canada.

Ballast water measures do not address all key risks

6.50 Transport Canada has acknowledged that ballast water exchange is not always effective at removing the organisms contained in ships' ballast water tanks. The Department noted in its response to one of our 2002 recommendations that regulation of ballast water exchange is only an "interim step," and that ballast water treatment technology is needed in the longer term. Department officials told us that the process for incorporating ballast water treatment technology will be

long and complicated, requiring international cooperation and research. Compounding the problem is that once an appropriate treatment technology is developed, retrofitting existing ships with new ballast treatment technologies is expected to take many more years.

6.51 A further complication is the fact that non-ocean-going vessels operating exclusively within the Great Lakes can spread aquatic invasive species that have already been introduced. Despite this, these vessels are exempt from the 2006 regulations and are not required to submit ballast water reporting forms. Consequently, Transport Canada has no ballast water use, discharge, or exchange data available for the domestic fleet on the Great Lakes. This pathway is significant because domestic vessels move millions of tonnes of ballast water between the lakes.

6.52 Other shipping-based pathways still pose major risks. Organisms attached to ship hulls can easily survive a long voyage and establish themselves in foreign ports. Recreational watercraft and fishing equipment can also spread aquatic invasive species between waterways. Despite hull fouling being identified as a key pathway for the introduction and spread of aquatic invasive species in the Canadian Action Plan to Address the Threat of Aquatic Invasive Species, there are no regulations in Canada to reduce dispersal by this means (the attachment of invasive species to ship and boat hulls). Aside from the ballast water regulations, measures to limit dispersal of aquatic invasive species due to recreational and commercial boating are mainly focused on education and are voluntary.

Conclusion

6.53 The government has made unsatisfactory progress in responding to the recommendations we made in 2002. Fisheries and Oceans Canada has made unsatisfactory progress in assessing the risks posed by aquatic invasive species. Although some risk assessments have begun, the number of existing aquatic invasive species and the rate at which new ones are becoming established far exceeds the rate at which the Department is assessing risks. The Department is not in a position to formally identify which aquatic invasive species pose the greatest risks to Canada's aquatic ecosystems, or the economy.

6.54 The Department has not set risk-based priorities for the prevention, control, or eradication of aquatic invasive species or determined the actions necessary to do so and it has not fully implemented monitoring nor reported on the effectiveness of measures

taken. The Department does not have a plan for early detection of or rapid response to priority aquatic invasive species.

6.55 Transport Canada has implemented one of the two recommendations we made in 2002. Regulations that reflect current best practices for managing ballast water came into force through the *Canada Shipping Act* in 2006.

6.56 On our second 2002 recommendation—to develop and implement a means to monitor and report on regulatory compliance—the Department has made unsatisfactory progress. Monitoring and enforcement are insufficient on Canada's east and west coasts to assure Canadians that the risks posed by ballast water are being effectively regulated. Existing efforts are not sufficiently targeted to the highest risk vessels. There are also gaps in the Department's existing compliance data, particularly on the east and west coasts, and the Department has not established the capacity to report on compliance with Canada's ballast water regulations on a national basis.

6.57 The implementation gap persists. The federal government has made unsatisfactory progress in managing the threats posed by aquatic invasive species, and Canada's ecology and economy are still at risk from aquatic invasive species. Treatment standards for ballast water still need to be defined. Other major pathways, such as hull fouling and the domestic fleet in the Great Lakes, remain to be addressed. We reported in 2002 that real progress in controlling aquatic invasive species could be a long way off. Six years later, our view has not changed.

About the Audit

Objectives

The main objective of our follow-up audit was to assess the progress that Fisheries and Oceans Canada and Transport Canada had made in responding to the recommendations in our 2002 audit on invasive species.

We examined whether

- Fisheries and Oceans Canada had made satisfactory progress in implementing selected recommendations made with respect to managing the risks posed by aquatic invasive species, and
- Transport Canada had made satisfactory progress with respect to managing ballast water.

Scope and approach

Our audit covered the measures taken following the recommendations on aquatic invasive species made in our 2002 audit, *Invasive Species*. We looked at how Fisheries and Oceans Canada is managing risks posed by aquatic invasive species and how Transport Canada is controlling the introduction of aquatic invasive species into Canadian waters from ship ballast water. These issues were selected as being of continued interest to Parliament and Canadians and still posing a significant risk.

Our approach included reviewing documents from the headquarters and regional offices of both departments, interviewing management and employees (including visits to two Fisheries and Oceans Canada research labs, and one regional Transport Canada office), examining databases, analyzing procedures, and observing operations.

Our examination did not include recommendations made to Environment Canada, since this work would have involved terrestrial invasive species and the overall coordination of the federal government's response to invasive species. These areas were beyond the scope of our current audit. Our audit also did not include Fisheries and Oceans Canada's programs for dealing with introductions of alien or genetically modified species from domestic fish-stocking programs or from aquaculture operations. These areas were not within the scope of our 2002 audit and so were not followed up here.

Criteria

The criteria for the audit were derived from our 2002 audit recommendations.

- We expected Fisheries and Oceans Canada to have developed and implemented a means to identify and assess the risks of aquatic invasive species and use it as a tool for setting departmental priorities and objectives for the prevention, control, or eradication of those risks.
- We expected Fisheries and Oceans Canada to have put in place a monitoring and reporting system that tracks the effectiveness of measures taken toward its invasive species objectives and to report on progress annually.
- We expected Transport Canada to have defined best management practices for ship ballast and established regulations requiring application of those practices on all ships entering Canadian waters.
- We expected Transport Canada to have developed and implemented a means to monitor, maintain records, and report on compliance with Canadian ballast water regulations.

Audit work completed

Audit work for this chapter was substantially completed on 15 June 2007.

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Appendix List of recommendations

The following is a list of recommendations found in Chapter 6. The number in front of the recommendation indicates the paragraph number where it appears in the chapter. The numbers in parentheses indicate the paragraph numbers where the topic is discussed.

Recommendation	Response
Managing the risks posed by aquatic invasive species	
6.23 Fisheries and Oceans Canada should apply a systematic risk-based approach to early detection and develop the ability to respond rapidly when new invasive species are detected in order to prevent them from becoming established or to control them. **(6.15–6.22)**	**Fisheries and Oceans Canada's response.** Agreed. Fisheries and Oceans Canada acknowledges the need for a systematic, risk-based approach to early detection and rapid response and therefore accepts this recommendation. Risk assessment is the foundation of a risk-based approach to any management program and aquatic invasive species are no exception. Since Budget 2005, when the Department received an annual budget of $2 million, the Department has put in place the building blocks to establish a systematic risk-based approach and has been working with Canadians to mitigate the impacts of aquatic invasive species. One of the critical building blocks has been the creation of the Centre of Expertise for Aquatic Risk Assessment (CEARA). CEARA assesses the risk of existing and potential aquatic invasive species and their introduction pathways to guide other program activities. With regard to a rapid response capacity, the Department alerts stakeholders and other jurisdictions in a timely fashion when a new nonindigenous species is discovered. The Department provides them with advice on appropriate response measures when required. In response to this recommendation and to the extent permitted by current budgets, the Department will build upon its existing risk assessment, scientific research, and monitoring activities to implement a formalized risk-based approach to early detection of and rapid response to aquatic invasive species in partnership with other jurisdictions and stakeholders.

Recommendation	Response
Managing ballast water	
6.49 Transport Canada should ensure that ships entering Canadian waters from high-risk locations are appropriately and systematically monitored and that ballast water management practices applied by these ships comply with Canadian regulations. **(6.31–6.48)**	**Transport Canada's response.** Agreed. We are acting on this by launching a database of ecosystem data of the world's ports. This will identify ships arriving from ports with a higher risk of carrying species that would be invasive for Canada.

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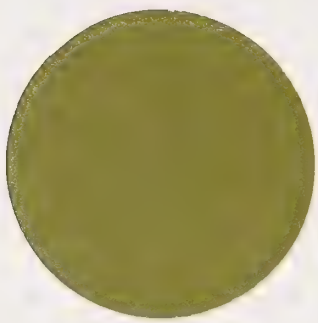
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MARCH

Ecosystems

Chapter 7
Areas of Concern in the Great Lakes Basin

Office of the Auditor General of Canada



2008



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The March 2008 Status Report of the Commissioner of the Environment and Sustainable Development comprises The Commissioner's Perspective—2008, Main Points—Chapters 1 to 14, Appendices, and 14 chapters. The main table of contents for the Report is found at the end of this publication.

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Chapter

7

Areas of Concern in the Great Lakes Basin

All of the audit work in this chapter was conducted in accordance with the standards for assurance engagements set by The Canadian Institute of Chartered Accountants. While the Office adopts these standards as the minimum requirement for our audits, we also draw upon the standards and practices of other disciplines.

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Ecosystems
Areas of Concern in the Great Lakes Basin

Main Points

What we examined

In 1987, changes to the Canada–United States Great Lakes Water Quality Agreement committed both nations to develop and implement action plans for cleaning up areas in the Great Lakes basin where the natural environment had been severely degraded. These areas were designated as areas of concern. There are currently 15 in Canada.

The federal government has overarching responsibility for the restoration of areas of concern in Canada, with Environment Canada as the lead department. Remedial action plans developed in cooperation with provinces and municipalities, First Nations communities, and non-government organizations guide restoration and protection efforts at each area of concern. When beneficial uses such as swimming and fishing are no longer impaired and the area has been restored, its designation as an area of concern is removed—known as "delisting."

In 2001, we reported that Environment Canada had not set clear priorities for remedial action. We found gaps in management and governance, and goals to restore and delist areas of concern had not been met. It was not clear how or when the government planned to see areas of concern restored and delisted. We recommended that Environment Canada clarify its role and responsibilities and those of its partners, and that it develop and implement plans for delisting areas of concern, with particular attention to remediating contaminated sediment and addressing the issue of overloaded municipal sewage systems. The Department agreed with our recommendations and committed to developing and implementing action plans.

For this status report, we examined Environment Canada's progress on these issues since our last audit. We examined whether the Department has clarified the roles and responsibilities of all partners; developed and implemented plans for delisting areas of concern, monitored and reported progress toward implementing action plans as the Great Lakes Water Quality Agreement requires; and ensured that the plans are periodically adjusted, as necessary. We also examined the extent to which the actions taken have achieved the government's

objectives and led to the restoration of environmental quality of areas of concern.

Why it's important

The Great Lakes Basin is ecologically important, and its environmental quality is vital to millions of Canadians. It is home to about one third of Canada's population. It contains 8 of Canada's 20 largest cities and provides drinking water for over eight million residents of Ontario. The Basin plays a vital role in the physical, social, and economic life of Canada, supporting almost 40 percent of Canada's gross domestic product, 25 percent of its agricultural production, and more than 50 percent of its manufacturing activity. It also supports rich biological diversity and significant fisheries. Because they hold approximately 20 percent of the Earth's surface fresh water, the Great Lakes also have international significance.

As indicated in the Great Lakes Water Quality Agreement, population growth and economic development in the Great Lakes Basin during the twentieth century have degraded the environmental quality of the region, threatening its economy and the quality of life of the people who live there. For over 20 years, Canada and the United States have been committed to restoring beneficial uses in areas of concern in the Great Lakes.

What we found

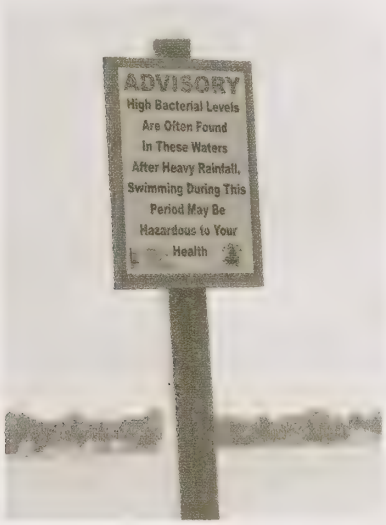
- Environment Canada has made unsatisfactory progress on the issues we raised in our 2001 audit. The Department has not ensured that criteria for delisting are specified for each Canadian area of concern. While the Department has recently clarified some responsibilities, it has still not clearly specified who is responsible for carrying out all the required remedial actions, who will pay for those efforts, and within what timelines the actions will be taken. Finally, it has not adequately assessed the extent to which each impairment in each Canadian area of concern has been restored and it has not reported progress to the International Joint Commission as it is required to do under the Great Lakes Water Quality Agreement.
- After more than 20 years, only 2 of Canada's original 17 areas of concern have been delisted—the latest in 2003. Priority actions have been completed for one other area, which is now recognized by the government as an "area in recovery." The majority of impairments to beneficial uses that were originally identified in areas of concern still exist today.
- Two principal sources of contamination continue to impede the government's progress on delisting areas of concern—contaminated sediments, which Environment Canada estimates would cost a total

of $150 million to clean up, and overloaded municipal wastewater systems, which it estimates would cost a total of $2.4 billion to fix. Solving these problems is critical to restoring most areas of concern.

The Department has responded. Environment Canada agrees with our recommendations. Its responses are included with the related recommendations throughout the chapter.

Introduction

For more information on the federal government's management of aquatic invasive species, please consult Chapter 6, Ecosystems—Control of Aquatic Invasive Species.



Beach advisory along the St. Clair River due to degraded water quality.

Source: Environment Canada

7.1 The growing population and continuous economic development in the Great Lakes Basin during the twentieth century degraded the region's environment, leaving a legacy of contamination that now threatens its economy and quality of life. Other stressors such as climate change and aquatic invasive species are compounding the effects of that contamination on water quality and the ecology in the Great Lakes Basin.

7.2 The Great Lakes Water Quality Agreement, which the Government of Canada and the United States signed in 1972 and renewed in 1978, expresses each country's commitment to restoring and maintaining the chemical, physical, and biological integrity of the Great Lakes Basin Ecosystem. The 1987 protocol to the Great Lakes Water Quality Agreement cited areas of concern as the most polluted areas in the Great Lakes Basin, where action was urgently needed. Severe pollution in these areas has resulted in conditions or situations that prevent Canadians from using or enjoying their natural environment. In this chapter, this is referred to as "impairment of beneficial uses" (Exhibit 7.1).

Exhibit 7.1 Impairment of beneficial uses in areas of concern

"Impairment of beneficial uses" means a change in the chemical, physical, or biological integrity of the Great Lakes System sufficient to cause any of the following:

- restrictions on fish and wildlife consumption;
- tainting of fish and wildlife flavour;
- degradation of fish wildlife populations;
- fish tumours or other deformities;
- bird or animal deformities or reproduction problems;
- degradation of benthos;
- restrictions on dredging activities;
- eutrophication or undesirable algae;
- restrictions on drinking water consumption, or taste and odour problems;
- beach closings;
- degradation of aesthetics;
- added costs to agriculture or industry;
- degradation of phytoplankton and zooplankton populations; and
- loss of fish and wildlife habitat.

Source: Great Lakes Water Quality Agreement

7.3 The objective of the Agreement is to restore beneficial uses and delist areas of concern. Delisting occurs once the area has met specific, measurable, achievable, and scientifically defensible criteria for the restoration of beneficial uses, as defined by a remedial action plan, and agreed on by communities and agencies that are responsible for the areas. The protocol commits the parties to developing and implementing remedial action plans to clean up these areas and restore beneficial uses.

7.4 Of the 43 areas of concern identified in the Great Lakes, 17 are located in Canada. As indicated in Exhibit 7.2, Canada shares five of its areas of concern with the United States.

7.5 Since 1987, two Canadian areas of concern have been delisted, Collingwood Harbour in 1994 and Severn Sound in 2003. Although all the recommended remedial actions have been completed in the Spanish Harbour area of concern for almost a decade, contaminated river and harbour sediments continue to impair the ecosystem. However, in cooperation with its partners, Environment Canada has

Exhibit 7.2 **Canadian and binational areas of concern**



Source: Base map provided by Environment Canada

determined that it is less risky for the environment to leave the contaminated sediments in place. Environment Canada now qualifies the area as being in the process of natural recovery. This area is not considered delisted.

7.6 Canada's 15 remaining areas of concern vary significantly in terms of their geographical size, the extent of urbanization, and the complexity of the rehabilitation efforts still required. They range from single-industry lakeshore communities to the multi-stressor situation that exists in the Hamilton and Greater Toronto areas.

Federal roles and responsibilities

7.7 Through its commitments and obligations under the Great Lakes Water Quality Agreement, the federal government has overarching responsibility for the restoration of Canadian areas of concern. The federal government has other relevant responsibilities such as the management of federal lands (including harbour beds), the enforcement of federal legislation (such as the *Fisheries Act*), jurisdiction over international waterways, and scientific research and information/technology transfer.

7.8 The Agreement requires the governments of Canada and of the United States to report to the International Joint Commission every two years on progress toward restoring beneficial uses in the areas of concern. The International Joint Commission is an independent binational organization established in 1909 to help prevent and resolve disputes relating to the use and quality of boundary waters. It also advises both governments on related questions and assists in implementing the Great Lakes Water Quality Agreement.

7.9 Environment Canada has the lead in implementing the Great Lakes Water Quality Agreement on behalf of the federal government. The Department is responsible for coordinating Canada's actions to meet the goals and objectives of the 1987 protocol to the Agreement. The key initiatives the Department leads are the

- Canada–Ontario Agreement Respecting the Great Lakes Basin (the Canada–Ontario Agreement), the mechanism for harmonizing objectives and coordinating actions among the federal and provincial governments;
- Great Lakes Action Plan 2000–2005, the main federal initiative for meeting Canada's obligations under the Canada–Ontario Agreement and the Great Lakes Water Quality Agreement; and

- Great Lakes Sustainability Fund, part of the Great Lakes Action Plan, the main source of federal funding for projects that address areas of concern. The fund finances a portion of the total cost of projects focused on three major issues: fish and wildlife habitat rehabilitation and stewardship; contaminated sediment assessment and remediation; and innovative approaches to improving municipal wastewater and stormwater quality. Partners finance the remaining costs of the projects (Exhibit 7.3).

Exhibit 7.3 Environment Canada has many partners in the Canada–Ontario Agreement

Federal Partners	Fisheries and Oceans Canada, Health Canada, Natural Resources Canada, Agriculture and Agri-Food Canada, Transport Canada, Canadian Heritage, Public Works and Government Services Canada
Provincial Partners	Government of Ontario—Ministry of the Environment, Ministry of Natural Resources, Ministry of Agriculture, Food and Rural Affairs
Other Partners	Conservation authorities, First Nations, industry, municipalities, the public, universities

7.10 While the federal government has overarching responsibility for the restoration of areas of concern, it does not have exclusive jurisdiction in these matters. In particular, critical issues such as contaminated sediment remediation and municipal wastewater infrastructure upgrades are subject to provincial and municipal decision-making authority. Implementing remedial actions in areas of concern in Canada therefore requires the active collaboration of many sectors of society, including all levels of government (federal, provincial, municipal), First Nations, industry, non-government organizations, and individuals. Accordingly, the ability to broker effective cooperation is vital for the federal government to meet its commitments in relation to areas of concern.



Slope stabilization beside the Niagara River to reduce input of sediment and nutrients from erosion.

Source: Niagara Parks Commission

What we found in 2001

7.11 In our 2001 report, we observed that the federal government was actively engaged in setting up structures to take action in areas of concern. We noted that while the government generally managed the Great Lakes Sustainability Fund well, its delisting goals were not met. It had not established a clear set of priorities for remedial action in areas of concern and it was not clear how or when the government planned to restore beneficial uses and delist areas of concern. We said that, to ensure that work was completed in the areas of concern, the federal

government needed to set priorities, clearly link proposed actions to delisting criteria, and broker coordinated action by other governments and organizations.

7.12 We recommended that Environment Canada clarify its role and responsibilities and those of its partners, and develop and implement plans for delisting areas of concern. Environment Canada agreed with our 2001 recommendations and committed itself to developing and implementing action plans accordingly.



Volunteers in the Toronto and Region cut notches to stop erosion and minimize further habitat destruction.

Source: Toronto and Region Conservation Authority



Fish are removed from a work site prior to removing a fish barrier in the Toronto and Region.

Source: Toronto and Region Conservation Authority

Events since 2001

7.13 Since 2001, Environment Canada and its partners have undertaken many initiatives to improve conditions at areas of concern. Examples of those initiatives include:

- programs to remediate barriers to fish passage in the Toronto and Region and the Niagara River areas of concern, and projects to address polluted surface water runoff in the Bay of Quinte;
- a study to investigate changes in breeding bird populations inside areas of concern as compared to other comparable areas;
- a stream assessment of the Sutherland Creek subwatershed in the St. Lawrence area of concern, and the construction of features to improve underwater habitat for fish;
- the treatment, containment, and monitoring of sediment in the Thunder Bay Harbour—one of the most contaminated Canadian areas of concern—along with the creation of new fish habitat;
- the creation of the Canada–Ontario Agreement Sediment Assessment Decision-making Framework to standardize decision making when assessing risks that contaminated sediment poses; and
- the upgrade of sewage treatment plants in Thunder Bay, Sault Ste. Marie, and Windsor.

7.14 The Great Lakes Sustainability Fund currently supports more than 80 partnerships with municipalities, conservation authorities, universities, other levels of government, and non-government organizations. Despite the investment of more than $350 million from all partners through the fund over the last 15 years, Environment Canada estimates an additional $3.5 billion would be necessary to clean up significant problems that continue to impair beneficial uses in areas of concern. Exhibit 7.4 summarizes projects the fund has supported since 1990.

Exhibit 7.4 **From 1990 to 2005, $355.5 million has been spent on a variety of projects in areas of concern**

Project Type	Number of Projects	Partners Resources ($M)	Great Lakes Sustainability Fund ($M)	Total ($M)
Fish and Wildlife	306	160.4	46.1	206.5
Contaminated Sediments	111	37.7	25.4	63.1
Wastewater Infrastructure	232	55.4	21.2	76.6
Other (administration, communications)	45	1.6	7.7	9.3
Total	**694**	**$255.1**	**$100.4**	**$355.5**

7.15 Environment Canada and its partners have also made significant changes to the goals related to areas of concern contained in successive Canada–Ontario agreements. For example, in 2002, the number of areas of concern to be delisted was decreased from nine (in 1994) to two, and in the 2007 Canada–Ontario Agreement no areas of concern were targeted for delisting.

Focus of the audit

7.16 We examined the progress Environment Canada made in addressing the issues and recommendations we made in our 2001 audit. Specifically, we set out to determine whether Environment Canada had made satisfactory progress in clarifying its role and responsibilities and those of its partners and set clear priorities for carrying out remedial action in areas of concern, whether it had clearly linked proposed actions to delisting criteria and whether it had brokered coordinated action by other governments and organizations to develop and effectively implement plans for delisting areas of concern.

7.17 We also examined progress on federal goals related to areas of concern made in the 2002 Canada–Ontario Agreement and the Great Lakes Action Plan 2000–2005, which were intended to meet Canada's commitments under the Canada–United States Great Lakes Water Quality Agreement. More details on the audit objectives, scope, approach, and criteria are in **About the Audit** at the end of this chapter.

Observations and Recommendations

Status of areas of concern

7.18 We followed up on three recommendations and one observation from our 2001 audit. We expected that progress would have been made against the issues identified.

Environment Canada's efforts have not delivered expected results

7.19 The 2002 Canada–Ontario Agreement established three goals related to areas of concern:

- delist at least two areas of concern;
- complete all required actions for remedial action plans in at least six areas of concern; and
- make significant progress towards restoring environmental quality in the remaining areas of concern.

7.20 We expected that Environment Canada, working with its partners, would achieve the goals laid out in this five-year Agreement. We interviewed departmental officials responsible for coordinating implementation of the Agreement on behalf of the federal government in the Ontario and Quebec regions, and we examined relevant documents and files provided to us by the Department. While we found that some action had been taken on 98 percent of the commitments in the 2002 Canada–Ontario Agreement, those activities had not translated into achieving the Agreement's three main goals.

7.21 With regard to the first goal, Environment Canada, on behalf of the federal government, delisted one area of concern—Severn Sound—in 2003 (Exhibit 7.5). However, in relation to goal number two, in no other case were all the specified remedial actions for delisting sites completed. With regard to the third goal, while several projects have been implemented, the term "significant progress" is not defined in the Agreement in terms of expectations or results. We found that the Department has not established an objective basis upon which to assess performance on that goal.

7.22 Environment Canada failed to clearly link the actions laid out in the 2002 Canada–Ontario Agreement to the achievement of the specified goals. In addition, it did not clearly spell out in that Agreement what is to be accomplished or who is responsible. The Department recognized the latter weaknesses and worked cooperatively with its partners to develop a performance measurement framework that was put in place in 2005, three years into the five-year Agreement.

Exhibit 7.5 Success in delisting an area of concern—Severn Sound

The governments of Canada and Ontario successfully implemented a Remedial Action Plan and officially removed Severn Sound from the list of areas of concern in January 2003. Severn Sound was the second Great Lakes area of concern to be delisted in over 20 years.

Severn Sound is located in south-eastern Georgian Bay. Its watershed covers an area of 1,098 square kilometres and includes many forests, wetlands, farms, sandy beaches, thousands of islands, and small secluded bays. It also includes significant population centres in Midland and Penetanguishene.

Major environmental issues of concern in the area included excessive plant growth and algal production as a result of sewage treatment plant discharges, agricultural runoff, shoreline development, and other pollution. Additional concerns included changes in fish communities and habitat loss.

According to Environment Canada, notable accomplishments of the Severn Sound Remedial Action Plan included planting trees, reducing intensive agriculture, protecting streams, and reducing pollution.

Cooperation between municipalities, local environmental associations, and provincial and federal departments was critical to the remedial action plan process.

The federal government did not meet its own goals for the Great Lakes Action Plan

7.23 The Great Lakes Action Plan 2000–2005 (referred to in our 2001 audit as the Great Lakes Basin 2020 Program) represents the federal contribution to the Canada–Ontario Agreement. The four federal goals set out in the plan are to

- complete all federal actions set out in the remedial action plans in 13 areas of concern;
- progress towards restoring three areas of concern: Hamilton Harbour (Exhibit 7.6), Toronto and Region, and Port Hope (a radioactive waste site where the remediation is under the leadership of Natural Resources Canada);
- develop knowledge, tools, and techniques for establishing restoration targets and restoring impaired beneficial uses of the environment; and
- assess progress and confirm success in restoring impaired beneficial uses of the environment through monitoring, research, and public engagement.



Volunteers plant behind a mud flat to create improved habitat for fish and wildlife in Hamilton.

Source: Bay Area Restoration Council

7.24 We expected that Environment Canada and its partners would achieve the four goals laid out in this five-year plan. We also expected that it would have monitored and reported progress toward implementing action plans as the Great Lakes Water Quality Agreement requires. We interviewed departmental officials responsible

Exhibit 7.6 Hamilton Harbour needs remediation for contaminated sediment

Hamilton Harbour is a major Canadian shipping centre and supports the largest concentration of heavy industry in the country.



Randle Reef, located in Hamilton Harbour, is known as the second most contaminated coal-tar site in Canada after the Sydney Tar Ponds. Its sediments contain high concentrations of polynuclear aromatic hydrocarbons (PAHs) in coal tar. The PAH-contaminated sediments are re-circulating, floating to the surface as coal tar blobs, moving up into the food chain, and having an adverse effect on the local ecosystem. It is considered to be one of the more complex and highly contaminated Canadian areas of concern.

Randle Reef Remediation Project. In December 2002, Environment Canada (the project lead) and the Project Advisory Group consisting of 17 participating organizations agreed to a conceptual design for a structure that will cover and contain approximately 640,000 cubic metres of acutely toxic sediments.

The $90-million estimated cost of the project was still unfunded as we ended our audit.

for implementation of the Great Lakes Action Plan on behalf of the federal government in the Ontario and Quebec regions, and we examined relevant documents and files provided to us by the Department. We found that the federal goals had not been achieved.

7.25 Progress on the first and second goals of the Great Lakes Action Plan. With regard to the first goal, in only one case (Severn Sound) were all specified federal actions completed in an area of concern. With regard to the second goal, while progress has been made in developing and implementing watershed management plans in the Toronto and Region area of concern, performance falls short in other areas. The Department points to several reasons for these shortcomings. Among them were higher costs, new priorities and additional information concerning the extent of sediment remediation involved, and a lack of funding and of decision-making authority with respect to infrastructure.

7.26 Progress in the third and fourth goals of the Great Lakes Action Plan. In relation to the third and fourth goals, Environment Canada informed us that a comprehensive reassessment of the status of beneficial uses is not conducted on a regular basis due to the significant cost of such an undertaking. We have the view that information on the status of beneficial uses is critical for setting priorities for remedial action, establishing restoration targets, and assessing and reporting progress on restoring impaired beneficial uses of the environment.

The government does not have the information it needs on the current status of beneficial uses in areas of concern to set restoration targets or report reliably on progress.

7.27 After 20 years, Environment Canada is still defining or revising criteria for delisting more than half of the remaining 15 Canadian areas of concern. Based on information obtained from Environment Canada, the majority of the beneficial uses of the environment that were impaired when the areas of concern were established remain impaired today.

7.28 **Reporting progress.** Although Environment Canada has submitted two comprehensive reports on the status of beneficial uses, in 1994 and 2003, the Department has not been reporting progress every two years on implementing the action plans and restoring beneficial uses in areas of concern to the International Joint Commission, as required by the Great Lakes Water Quality Agreement. And although Environment Canada has been providing some information in its departmental performance report, it has not respected the reporting conditions of the Great Lakes Water Quality Agreement.

Major work is required to address contaminated sediment and wastewater quality

7.29 Solving two main problems—contaminated sediment and inadequate municipal wastewater infrastructure—is critical to restoring the beneficial uses that have been impaired in most areas of concern. Of the remaining 15 Canadian areas of concern, contaminated sediment or wastewater infrastructure need to be addressed in 11 locations. Five locations (Bay of Quinte, St. Clair River, Detroit River, Niagara River, and Hamilton Harbour) have both problems.

7.30 Environment Canada is responsible for administering and enforcing the *Fisheries Act* provisions dealing with the deposit of waste substances into water that fish frequent. The Department told us that it does not target municipal wastewater facilities for enforcement but does react to complaints involving such facilities. Department officials also told us that it is currently developing additional regulations to address the municipal wastewater sector.



Sewage treatment plant improvements in St. Marys are expected to improve river water quality and remedy beach closings.

Source: Environment Canada

7.31 Jurisdictional complexities add to the challenges. For example, sewage treatment infrastructure upgrades fall primarily under provincial and municipal jurisdiction. Moreover, some of the key authorities responsible for municipal wastewater infrastructure upgrades are either not parties to the Canada–Ontario Agreement

or are not clearly identified as responsible for carrying out the remedial actions within it. Environment Canada estimates the cost of needed municipal wastewater infrastructure at $2.4 billion. Great Lakes Action Plan funds are not available for such projects.

7.32 However, Great Lakes Action Plan funds can be allocated for contaminated sediment remediation, which Environment Canada estimates could be cleaned up at a cost of $150 million. As indicated by the Department, in addition to the $4.8 million that the Great Lakes Sustainability Fund is slated to receive annually from 2007 to 2010, the 2007 budget included $11 million over two years to accelerate the clean-up of contaminated sediments in eight Canadian areas of concern.

7.33 Despite the overwhelming importance of these two main challenges, no timelines have been established for bringing all relevant parties into the Canada–Ontario Agreement or for completing the remedial actions necessary to restore beneficial uses of the environment in areas of concern.

7.34 While we acknowledge that there are complex scientific and technological issues involved, based on our audit's findings, we conclude that the federal government and, in particular, Environment Canada, has made unsatisfactory progress on the recommendations and observations we made in our 2001 audit in relation to managing areas of concern. The Department has not clarified its role and responsibilities or those of its partners. The Department needs to provide greater leadership in setting priorities, clearly linking proposed actions and expected results to specific restoration criteria in each area of concern. It has not set timelines for the completion of all priority actions, not established cost-sharing arrangements with responsible partners, and not secured the resources needed to implement required actions. In addition, it has not reported progress to the International Joint Commission, as required under the Great Lakes Water Quality Agreement.

7.35 The Department has failed to broker coordinated action by other governments and organizations to ensure that partners implement all the initiatives necessary to clean up contaminated sediments and adequately treat municipal sewage in areas of concern. The initiatives undertaken as set out in the Canada–Ontario Agreement have not translated into achieving the goals laid out in the Agreement, which were to restore and delist areas of concern. Delisting criteria are still being defined or revised and status information on beneficial use impairments, critical to setting objectives, implementing initiatives, and assessing progress, is lacking (Exhibit 7.7).

Exhibit 7.7 **Progress in addressing our 2001 recommendations and finding is unsatisfactory**

Recommendations and Finding	Progress
Recommendation. Environment Canada should reassess its role and clearly articulate its responsibilities and commitments for freshwater management in the Great Lakes and St. Lawrence River basin, and clarify the commitments expected from other federal departments, especially but not limited to the following:	
i. completing the actions needed for delisting areas of concern;	Unsatisfactory
ii. remediating contaminated sediment in areas of concern and elsewhere in the basin where it is a significant environmental concern. (2001 Report of the Commissioner of the Environment and Sustainable Development (CESD), Chapter 1, Summary, see paragraph 160)	
Recommendation. Environment Canada, enlisting the participation of others where possible, should develop clear action plans to carry out its commitments for management of fresh water. It should develop initiatives to implement these plans, especially for the following:	
i. remediating contaminated sediment, with the provinces and industry, where possible;	Unsatisfactory
ii. treating municipal sewage (2001 CESD Report, Chapter 1, Summary, see paragraph 161)	
Recommendation. Environment Canada should ensure that Great Lakes 2020 and a renewed Canada–Ontario Agreement clearly identify the respective roles and responsibilities of the federal departments and provincial ministries, and the resources needed to carry them out. (2001 CESD Report, Chapter 1, Summary, paragraph 183)	Unsatisfactory
Finding. Environment Canada had not set clear priorities for action. It was not clear how or when the government planned to see areas of concern restored and delisted. Goals to restore and delist areas of concern had not been met. We concluded that the Department needed to set priorities, clearly link proposed actions to specific criteria for the delisting of each area of concern, and broker coordinated action by its federal partners and by other governments and organizations to ensure that work in the areas of concern is completed. (2001 CESD Report, Chapter 1, see paragraphs 3.3.20 and 3.3.21 and our audit objectives and main findings in section 3.3 of the Summary.)	Unsatisfactory

Satisfactory—Progress is satisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendations and finding were made.

Unsatisfactory—Progress is unsatisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendations and finding were made.

7.36 **Recommendation.** In order to fulfill its commitments under the Great Lakes Water Quality Agreement, Environment Canada, on behalf of the federal government, should establish and finalize arrangements with all relevant partners to ensure that they implement

the initiatives necessary to remediate contaminated sediment and to adequately treat municipal wastewater in Canadian areas of concern.

Environment Canada's response. Environment Canada accepts the recommendation; however, it is noted that implementation of actions to fully respond to this recommendation is dependent upon the commitment of partners.

By April 2008, Environment Canada will develop project plans for eight of the nine areas of concern where sediment management is required in order to remediate and delist the site (Port Hope Harbour is being addressed by Natural Resources Canada under a separate program due to the radioactive nature of the sediment in that location).

Environment Canada will then negotiate funding partnerships with all relevant partners (Ontario, local governments and other stakeholders) on a case-by-case basis. Sediment remediation will be completed in seven of the eight areas of concern by April 2012. Sediment remediation will begin in Hamilton Harbour by 2009 and the project will require approximately 10 years to complete.

By July 2009, Environment Canada will have completed a review of improvements to municipal wastewater treatment required to remediate and delist areas of concern. Environment Canada will then negotiate a formal commitment of intent by all relevant partners (Ontario, local governments) to seek funding for infrastructure improvements through established federal and provincial funding programs.

Adjustments have been made to the Canada–Ontario Agreement

7.37 In 2007, the Governments of Canada and Ontario released the 2007–2010 Canada–Ontario Agreement. Its goals regarding Canadian areas of concern are to

- complete priority remedial actions necessary to restore beneficial uses of the environment at the Nipigon Bay, Jackfish Bay, Wheatley Harbour, and St. Lawrence River (Cornwall) areas of concern; and
- make significant progress towards implementing remedial action plans, environmental recovery, and restoration of beneficial uses in 11 areas of concern.

7.38 The 2007–2010 Canada–Ontario Agreement includes two marked differences from previous Canada–Ontario agreements as it relates to areas of concern. First, it attempts to make results more

targeted and concrete and to better link actions with goals. For example, in the latest Agreement, Environment Canada has defined what it means by "significant progress towards implementing remedial action plans, environmental recovery and restoration of beneficial uses." However, the 2007–2010 Canada–Ontario Agreement no longer contains goals for delisting areas of concern and instead introduces the concept of "areas in recovery." In our view, the goals contained in the most recent Canada–Ontario Agreement fail to address those of the Great Lakes Water Quality Agreement for delisting areas of concern.

7.39 Recommendation. When specifying targets for restoring beneficial uses and delisting Canadian areas of concern, Environment Canada should clearly define all the necessary actions, including who is responsible for carrying them out, the cost-sharing arrangements, expected dates to complete those actions, and expectations for progress reporting.

Environment Canada's response. Environment Canada accepts the recommendation; however, it is noted that implementation of actions to fully respond to this recommendation is dependent upon the commitment of partners.

By July 2008, Environment Canada will clearly define all necessary actions to remediate and delist remaining areas of concern, including who is responsible for carrying them out. Environment Canada will then negotiate concurrence of all relevant partners (Ontario, local governments and other stakeholders) on a site-by-site basis as an addendum to existing remedial action plans.

Due to the nature of the projects and the limitations of funding partners, cost-sharing arrangements for remedial actions in areas of concern are negotiated on a project by project basis. Terms and conditions of Environment Canada's Great Lakes Sustainability Fund stipulate a maximum of one-third federal funding for projects for the remediation of areas of concern. Similar cost-sharing arrangements requirements are in place as part of Infrastructure Canada funding programs, whereby the amount of federal funding provided to an infrastructure project is generally matched by that provided by provincial and local or regional governments. Beyond this cost-sharing provision, as part of Infrastructure Canada funding programs, the maximum federal funding amount to be provided to the project is also specified thereby limiting the amount of the federal contribution to the project should cost overruns occur.

Expected dates for completion of actions leading to the remediation and delisting of areas of concern are included in the 2007–2010 Canada–Ontario Agreement Respecting the Great Lakes Basin. The current agreement commits Canada and Ontario to completing all actions in four areas of concern by 2010. In negotiation of future agreements, Environment Canada will advocate for greater specificity in the timeframe in which remedial actions will be completed across all areas of concern.

Environment Canada will work with the Province of Ontario to ensure biennial public progress reports required under the 2007–2010 Canada–Ontario Agreement Respecting the Great Lakes Basin regularly report progress and status of all Canadian and shared Canada–U.S. areas of concern.

Conclusion

7.40 Restoring water quality in the Great Lakes has been a major challenge for more than 35 years. More than 20 years ago, the Government of Canada designated 17 severely degraded areas of concern and slated them for clean-up. Problems included fish deformities, beach closings, and taste or odour problems with drinking water. Since then, only two areas have been cleaned up and delisted. Priority actions have been completed for only one other area of concern. The majority of the beneficial uses that were originally impaired in areas of concern are still impaired today.

7.41 In 2001, we found that there were several weaknesses in Environment Canada's management of areas of concern in the Great Lakes. Our view has not changed. Environment Canada has made unsatisfactory progress in responding to the observations and recommendations we raised in our 2001 audit with regard to clarifying its role and responsibilities and those of its partners and in developing and implementing plans for delisting areas of concern. While some actions have been taken in areas of concern, Environment Canada, as the primarily responsible federal department, is not meeting the objectives of the Great Lakes Water Quality Agreement.

7.42 Two predominant issues that continue to be principal sources of contamination have impeded the government's progress on delisting areas of concern: contaminated sediments and overloaded municipal sewage systems. Solving these problems is critical to restoring the beneficial uses and delisting most areas of concern.

About the Audit

Objective

The objective of our audit was to determine whether Environment Canada, as the federal lead and coordinator, has made satisfactory progress, working with its partners, in leading the implementation of selected recommendations and responding to observations made in our 2001 report (Chapter 1, Summary and Section 3). Those recommendations and observations concerned the development and implementation of remedial action plans for areas of concern in the Great Lakes Basin.

Scope, approach, and criteria

Our 2007 audit focused on progress made by Environment Canada in responding to selected observations and recommendations from our 2001 chapter. Our selection was based on the fact that the majority of the federal government's efforts and resources in the Great Lakes since our last audit have focused on areas of concern. Specifically, we examined whether Environment Canada has made satisfactory progress in setting clear priorities for action on restoring and delisting areas of concern, and in clarifying its role and responsibilities and those of its partners, especially for remediating contaminated sediment and treating municipal sewage.

For this audit, we interviewed department officials, reviewed documents, analyzed procedures, and examined databases and operations.

Criteria

We expected that, since Environment Canada agreed with all of our 2001 recommendations and committed to improving the situation, the Department would

- have clarified roles and responsibilities for implementing remedial action plans in the areas of concern;
- be monitoring remedial action plans, reporting progress against expected results, and making required adjustments in their implementation; and
- have restored environmental quality and beneficial uses, completed actions for remedial action plans, and progressed towards ecological rehabilitation in areas of concern.

Audit work completed

Audit work for this chapter was substantially completed on 15 August 2007.

Audit team

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Appendix List of recommendations

The following is a list of recommendations found in Chapter 7. The number in front of the recommendation indicates the paragraph number where it appears in the chapter. The numbers in parentheses indicate the paragraph numbers where the topic is discussed.

Recommendation	Response
Status of areas of concern	
7.36 In order to fulfill its commitments under the Great Lakes Water Quality Agreement, Environment Canada, on behalf of the federal government, should establish and finalize arrangements with all relevant partners to ensure they implement the initiatives necessary to remediate contaminated sediment and to adequately treat municipal wastewater in Canadian areas of concern. **(7.29–7.35)**	Environment Canada accepts the recommendation; however, it is noted that implementation of actions to fully respond to this recommendation is dependent upon the commitment of partners. By April 2008, Environment Canada will develop project plans for eight of the nine areas of concern where sediment management is required in order to remediate and delist the site (Port Hope Harbour is being addressed by Natural Resources Canada under a separate program due to the radioactive nature of the sediment in that location). Environment Canada will then negotiate funding partnerships with all relevant partners (Ontario, local governments and other stakeholders) on a case-by-case basis. Sediment remediation will be completed in seven of the eight areas of concern by April 2012. Sediment remediation will begin in Hamilton Harbour by 2009 and the project will require approximately 10 years to complete. By July 2009, Environment Canada will have completed a review of improvements to municipal wastewater treatment required to remediate and delist areas of concern. Environment Canada will then negotiate a formal commitment of intent by all relevant partners (Ontario, local governments) to seek funding for infrastructure improvements through established federal and provincial funding programs.

Recommendation	Response
7.39 When specifying targets for restoring beneficial uses and delisting Canadian areas of concern, Environment Canada should clearly define all the necessary actions, including who is responsible for carrying them out, the cost-sharing arrangements, expected dates to complete those actions, and expectations for progress reporting. **(7.37–7.38)**	Environment Canada accepts the recommendation; however, it is noted that implementation of actions to fully respond to this recommendation is dependent upon the commitment of partners. By July 2008, Environment Canada will clearly define all necessary actions to remediate and delist remaining areas of concern, including who is responsible for carrying them out. Environment Canada will then negotiate concurrence of all relevant partners (Ontario, local governments and other stakeholders) on a site-by-site basis as an addendum to existing remedial action plans. Due to the nature of the projects and the limitations of funding partners, cost-sharing arrangements for remedial actions in areas of concern are negotiated on a project by project basis. Terms and conditions of Environment Canada's Great Lakes Sustainability Fund stipulate a maximum of one-third federal funding for projects for the remediation of areas of concern. Similar cost-sharing arrangements requirements are in place as part of Infrastructure Canada funding programs, whereby the amount of federal funding provided to an infrastructure project is generally matched by that provided by provincial and local or regional governments. Beyond this cost-sharing provision, as part of Infrastructure Canada funding programs, the maximum federal funding amount to be provided to the project is also specified thereby limiting the amount of the federal contribution to the project should cost overruns occur. Expected dates for completion of actions leading to the remediation and delisting of areas of concern are included in the 2007–2010 Canada–Ontario Agreement Respecting the Great Lakes Basin. The current agreement commits Canada and Ontario to completing all actions in four areas of concern by 2010. In negotiation of future agreements, Environment Canada will advocate for greater specificity in the timeframe in which remedial actions will be completed across all areas of concern. Environment Canada will work with the Province of Ontario to ensure biennial public progress reports required under the 2007–2010 Canada–Ontario Agreement Respecting the Great Lakes Basin regularly report progress and status of all Canadian and shared Canada–U.S. areas of concern.

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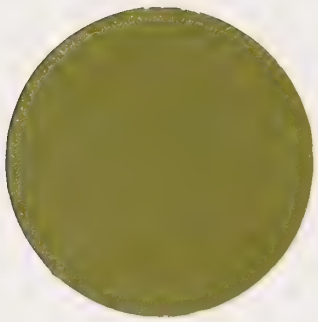
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MARCH

Management Tools and Government Commitments

Chapter 8
International Environmental Agreements

Office of the Auditor General of Canada



2008



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Chapter 8
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The March 2008 Status Report of the Commissioner of the Environment and Sustainable Development comprises The Commissioner's Perspective—2008, Main Points—Chapters 1 to 14, Appendices, and 14 chapters. The main table of contents for the Report is found at the end of this publication.

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Chapter

8

International Environmental Agreements

All of the audit work in this chapter was conducted in accordance with the standards for assurance engagements set by The Canadian Institute of Chartered Accountants. While the Office adopts these standards as the minimum requirement for our audits, we also draw upon the standards and practices of other disciplines.

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International Environmental Agreements

Main Points

What we examined

Canada has signed more than 100 international environmental agreements over the years, the Kyoto Protocol among them, committing it to act on crucial issues such as ocean pollution, fishery conservation, and the protection of endangered species.

In 2004, we reported that lead departments for the agreements we looked at had varying degrees of knowledge about whether they were achieving the objectives of the agreements. Some departments did not always know the environmental results they were achieving under the agreements or, in some cases, the results they were supposed to achieve. Nor were all the departments reporting on the results they had achieved. In 2005, we reported that the government still had no action plan for meeting its 2002 World Summit on Sustainable Development (WSSD) commitments.

For this status report, we examined the federal government's management of information on international environmental agreements to assess the progress it has made since 2004. We examined 20 international environmental agreements in four departments—Environment Canada, Fisheries and Oceans Canada, Transport Canada, and Foreign Affairs and International Trade Canada. We assessed the availability and fairness of the information they had about the agreements' objectives, the means they have established to meet the objectives, their current targets, and their reporting on progress. We also examined how the government plans and reports on progress made against its WSSD commitments.

We did not look at the extent to which the agreements were successful but rather at whether enough information is available for parliamentarians and other interested Canadians to judge whether Canada is meeting its environmental commitments to the international community.

Why it's important

Given the increasing global awareness of risks to the environment caused by human activities, Canada's international reputation depends in part on the credibility it achieves by keeping its international environmental commitments and on its ability to demonstrate the environmental results that it is achieving under the agreements. As one of the world's largest countries, rich in natural resources, Canada also has much to gain from the success of its international environmental agreements—and a corresponding obligation.

What we found

- The government has made unsatisfactory progress toward providing a complete and understandable picture of the results expected from Canada's international environmental agreements. While Environment Canada, Fisheries and Oceans Canada, Transport Canada, and Foreign Affairs and International Trade Canada generally make information available on Canada's obligations under the agreements, they provide less information on the programs and means in place to meet the obligations. In addition, the departments do not generally make complete and understandable information available on the results the government both expected to achieve and has achieved toward fulfilling obligations under the agreements.
- The government has made unsatisfactory progress in planning, monitoring, and reporting the extent to which Canada is meeting its commitments from the World Summit on Sustainable Development in 2002. While it has followed the United Nations Commission on Sustainable Development approach to monitoring and reporting, it still has no longer-term plan for ensuring that it will be in a position to report significant progress on its commitments, while taking into account the review timetable established by the UN.

The departments have responded. The departments agree with our recommendation. Their detailed responses follow the recommendation in the chapter.

Introduction

8.1 How can countries address environmental issues that cross one or more geopolitical boundaries? Experience teaches us that countries cannot tackle issues such as air pollution, deterioration of the ozone layer, climate change, and ocean pollution by acting alone. Instead, they have needed to develop international agreements on a wide range of subjects that permit them to collaborate.

8.2 In 2001, the United Nations Environment Programme reported that "there were over 500 international treaties and other agreements related to the environment."

8.3 Since 1972, Canada has been a key participant in international environmental activities. Over the years, it has signed a large number of international agreements and similar instruments dealing with various environmental issues. The Kyoto Protocol on greenhouse gas emissions is one such example. Canada's environmental commitments to the international community have increased in tandem with the number and complexity of agreements it has signed.

What we found in previous reports

8.4 In the 1998 Report of the Commissioner of the Environment and Sustainable Development, Chapter 2, Working Globally—Canada's International Environmental Commitments, we concluded that Canada could not judge its performance on its international commitments regarding the environment and sustainable development because there was no all-inclusive list of existing commitments. Without this information, Parliament's ability to oversee how Canada's international environmental commitments were being honoured was greatly reduced. In addition, we explained that an interested party needed answers to the following four questions to thoroughly assess Canada's performance regarding these agreements:

- What has Canada committed to do?
- What actions are required to meet those commitments?
- What actions has Canada taken?
- How successfully have these actions fulfilled Canada's commitments?

8.5 In the 2004 Report of the Commissioner of the Environment and Sustainable Development, Chapter 1, International Environmental Agreements, we examined whether the lead departments for five international environmental agreements knew to what extent they were

achieving specific key objectives related to those agreements. We focused on the results achieved for one objective in each of the agreements. We also examined whether the departments could make assurances regarding the quality of the information. We observed that

- the lead department for two of the agreements knew the extent to which it was achieving its environmental objectives;
- for the other three agreements, there were deficiencies in achieving environmental objectives; and
- for four of the five agreements, we made specific recommendations to the department responsible for the agreement, and we made an overall recommendation directed to all lead departments.

The departments agreed to make available more complete and understandable information on their agreements. The government responded to the audit by saying that it would continue to work to improve reporting provisions under international environmental agreements.

8.6 In 2002, the World Summit on Sustainable Development (WSSD) was held in Johannesburg, South Africa. This was a major event that brought together nearly 200 nations to address global sustainable development. The key outcome was the *Johannesburg Plan of Implementation*, which outlined the commitments that nations made at the WSSD. Since then, we have commented in our 2002 to 2005 reports that the federal government needs to develop an action plan to deliver results on Canada's WSSD commitments. In our 2005 audit, we reported that the government still had not done so.

Focus of the audit

8.7 The objective of this audit was to assess the progress that selected departments have made in responding to the underlying issues derived from certain recommendations, observations, and commitments on reporting their activities and results regarding Canada's international environmental commitments. We assessed progress, taking into consideration the complexity of addressing the issues we raised and the time that had elapsed. We focused on the

- availability of information regarding anticipated results on Canada's international environmental agreements and how those results are measured and reported; and
- planning, monitoring, and reporting on Canada's progress in meeting the commitments it made at the WSSD.

8.8 More details about the audit objective, scope, approach, and criteria are in **About the Audit** at the end of this chapter.

Observations and Recommendation

Availability and fairness of information

8.9 In this audit, we examined two broader issues related to Canada's international environmental agreements: the availability of information to Parliament and Canadians, and its fairness, focusing on ease of understanding (Exhibit 8.1). As stated in our earlier reports, we expected that lead departments would have clearly identified and documented anticipated results, and how to measure and report on them. We also expected that the federal government would

- keep track of Canada's international environmental agreements,
- identify a lead department for each agreement, and
- define the lead department's accountability for achievements and reporting.

Exhibit 8.1 How we defined available and fair information

By available, we mean that we expected the lead department would make complete and understandable information easily and publicly available through its planning and reporting documents (reports on plans and priorities, departmental performance reports, sustainable development strategies) as well as on its website, or by directing users to where the information can be readily obtained, such as in reports to international bodies.

By fair, we mean that we expected the lead department would provide, in a clear, complete, and understandable manner, current information that Parliament and Canadians need to assess progress. In essence, this information would tell the story of how Canada is meeting its commitments under international environmental agreements.

8.10 In our 2004 report, we found that lead departments had varying degrees of information about results and whether they were achieving the objectives of their agreements. In its response to our recommendation, the federal government said that it would work to improve reporting provisions under international environmental agreements.

8.11 To assess the federal government's progress since 2004, we selected 20 agreements from the four departments designated as lead for the greatest number of agreements according to Foreign Affairs and International Trade Canada's international environmental agreement

database. The following four departments were the lead for 93 of the 130 agreements listed:

- Environment Canada,
- Fisheries and Oceans Canada,
- Transport Canada, and
- Foreign Affairs and International Trade Canada.

Other selection criteria included the following: Canada is a signatory, the agreement was ratified and in force in Canada and internationally, and the agreement is environmentally significant. For more details about the selection process and audit approach, see **About the Audit** at the end of this chapter.

8.12 We took into account the variety of information media the government can use, such as its planning and reporting documents, the required reports prepared under the international agreements, as well as departmental websites and other documents. We looked for information that would tell the story of how Canada is meeting its commitments under international environmental agreements.

8.13 We also assessed the level of guidance the Treasury Board of Canada Secretariat provides for reporting progress on international environmental agreements and how it defines the lead department's accountability for reporting.

8.14 We noted that while the Secretariat does not outline specific procedures for international environmental agreements, it does provide general guidance on measuring and reporting results. For example, the *Guide to the Preparation of Part III of the Estimates* provides guidance on how to produce reports on plans and priorities and departmental performance reports. The Secretariat also provides guidance in *Results for Canadians: A Management Framework for the Government of Canada*, which states that management in all departments, agencies and functions must focus on achieving results and on reporting them in simple ways to elected officials and to Canadians.

The availability of information and its fairness remain uneven

8.15 The government's planning and reporting documents contained little information on the agreements. For example, of the twenty agreements examined, six were not mentioned in those documents while the others had only brief descriptions of some activities or

proposed activities. In addition, the frequency of required international reporting for the agreements varies:

- nine of the twenty agreements ask for some form of annual reporting,
- six have multi-year reporting (every two to four years), and
- five have no formal reporting requirements.

Because annual reporting is not always required, much of the available information is not current.

8.16 Considering the variety of information media, including departmental websites, we noted that the availability and fairness of information on Canada's international environmental agreements was uneven. For most of the agreements we examined, relatively complete and understandable information was available on matters that do not change much, such as the overall obligations and objectives of the agreement and, to a lesser degree, the specific programs, partnerships, and means in place to meet them. Information on more operational and variable matters—such as enforcement mechanisms, current targets, and Canada's progress in meeting its obligations—tended to be less complete, understandable, and available. If such information is not complete, understandable, and available, Parliament and Canadians cannot fully understand where Canada stands in relation to its commitments or how it is meeting the treaty's objectives. The following examples from two of the agreements examined illustrate these points.

8.17 The Convention on International Trade in Endangered Species (CITES). CITES came into effect in 1975 as a result of a growing awareness that international trade in wild species was endangering their survival. Environment Canada is the lead department responsible for implementing CITES on behalf of the Canadian government.

8.18 Environment Canada's planning and reporting documents contained limited information on the agreement and operational activities. They described some activities carried out during the year, such as attending meetings and updating regulations.

8.19 Environment Canada's CITES website, accessed through the Department's main website, provided easily available and relatively complete and understandable information on the Convention and the federal government's approach. It identified and described Environment Canada's role, and key partners (such as provinces and

agencies) and their roles. However, there was no description of the roles of the Canada Border Services Agency and the RCMP. The website clearly described the legislative vehicle—the *Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act*—Canada uses to meet its obligations and provided links to the regulations. It contained lists of species regulated by CITES, described the process for obtaining trading permits and gave information on CITES, with links to the website of the Convention's international secretariat.

8.20 However, Environment Canada's CITES website contained little information on enforcement targets or activities. As well, information on how Canada sets targets and expectations for meeting its obligations under the Convention is incomplete. In accordance with the requirements of the Act, it stated that the activities of the Canadian management, scientific, and enforcement authorities for CITES are presented in Environment Canada's annual reports on the Act. However, the latest annual report listed was for 2001, leaving Canadians uninformed about current activities and objectives. Department officials told us that they expected to present to Parliament a combined report for the years 2002 to 2004 in late 2007.

8.21 The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal. The Basel Convention, which came into force in 1992, was developed to help control the ever-increasing movement of hazardous waste and hazardous recyclable materials across borders—especially to sites that lack the capacity to process them—and to promote their environmentally sound management. Environment Canada is the lead department implementing the Convention on behalf of the federal government.

8.22 Environment Canada's latest planning and reporting documents included no information on the Basel Convention, other than a brief mention in the 2005–06 Departmental Performance Report that Canada's regulations regarding hazardous waste and hazardous recyclable materials had been updated.

8.23 Environment Canada's waste management website had links to the Basel Convention's international website. That website contained Canada's reports to the Basel Convention secretariat as well as

complete, understandable, and easily available information on the convention's three central objectives:

- minimizing the generation of hazardous waste and hazardous recyclable materials,
- ensuring hazardous waste and hazardous recyclable materials are disposed of in an environmentally sound manner and as close to where they were generated as possible, and
- minimizing the international movement of hazardous waste and hazardous recyclable materials.

It also had information on international reporting requirements regarding progress. In addition, we observed that the Department publishes annual reports on its website that contain some statistical information on the movement of waste. The latest report, issued in December 2006, covers activity for 2005.

8.24 The Department's website contained limited information on the current roles of key players, specifically, how the provinces and the Canada Border Services Agency are involved in meeting the Convention's objectives. The website clearly stated how the key regulations, the *Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations*, deal with the Convention's last objective and to some degree its second objective, but had little information dealing with the first objective. Finally, it contained no clear description of how Environment Canada monitors Canadian progress on the Convention or what specific targets Canada has set regarding its objectives—for example, targets to reduce hazardous waste and hazardous recyclable materials.

8.25 As these examples illustrate, when information on Canada's international obligations—including anticipated and actual results—is not complete, understandable, or available, Parliament and Canadians cannot gauge progress toward international and Canadian objectives, the trends in Canadian activity, or where implementation may be weak.

8.26 Given that the availability of information and its fairness remain uneven we have assessed the government's progress in providing a complete and understandable picture of Canada's international environmental agreements as unsatisfactory (Exhibit 8.2).

Exhibit 8.2 **Progress in addressing our finding on availability and fairness of information is unsatisfactory**

Finding	Progress
Lead departments responsible for international environmental agreements need to provide Parliament and Canadians with a complete and understandable picture of progress and anticipated results for Canada's international environmental agreements. (2004 Report of the Commissioner of the Environment and Sustainable Development, Chapter 1, see paragraph 1.130, and the 1998 Report of the Commissioner of the Environment and Sustainable Development, Chapter 2, see paragraphs 2.71 and 2.72)	Unsatisfactory

Satisfactory—Progress is satisfactory, given the significance and complexity of the issue, and the time that has elapsed since the finding was made.

Unsatisfactory—Progress is unsatisfactory, given the significance and complexity of the issue, and the time that has elapsed since the finding was made.

8.27 **Recommendation.** As lead departments responsible for international environmental agreements, Environment Canada, Fisheries and Oceans Canada, Transport Canada, and Foreign Affairs and International Trade Canada should provide Parliament and Canadians with complete, understandable, and current information on objectives, means, expected results, and results.

Environment Canada's response. Agreed. Environment Canada has various reporting methods, ranging from annual departmental performance reports to reports on plans and priorities and regular updating of the Department's international engagements posted on public websites to monitor and convey progress achieved. The Department will use the Report on Plans and Priorities, the Departmental Performance Report, and the Department's website to ensure information on its international environmental agreements' (IEA) objectives, means, anticipated results, and results achieved are transparently and effectively reported to Parliament and to Canadians.

By fall 2008, the Departmental Performance Report will highlight information on the Department's IEA results achieved against the expected results.

By spring 2009, the Report on Plans and Priorities will highlight information on the Department's IEA activities, plans, and priorities.

By the end of March 2009, the Department will regularly post reports and updates on IEA progress on respective Environment Canada branch public websites, where appropriate. In addition, by the end of

March 2008, the Department will use the recommendation, where applicable, as it updates its International Affairs website.

Fisheries and Oceans Canada's response. Fisheries and Oceans Canada agrees with the recommendation as it relates to the active and key international agreements in which the Department is already involved. Internationally, the Department supports activities designed to lead to more responsible management of high seas fisheries and the sustainability of high seas ecosystems by seeking improvements to international governance. It is in this spirit that Fisheries and Oceans Canada participates in the Regional Fisheries Management Organizations.

On its websites, the Department will present up-to-date information with regards to the plans and measures taken by these organizations on environmental issues, and will define the roles of Canada with regard to them. The Department will also reflect the above information in a consistent fashion in its departmental reports to Parliament and to Canadians, such as the Report on Plans and Priorities, the Business Plan, the Departmental Performance Report, and relevant integrated fisheries management plans. These documents will be updated starting in the next fiscal year, while the websites will be updated in an ongoing manner and as a result of revisions to the above-mentioned documents.

Transport Canada's response. Agreed. It should be noted that as these issues are complex, more than one department may be responsible for implementing an agreement for Canada under their respective mandates and legislation.

The Department already makes information on activities related to international environmental agreements under its responsibility available to Parliament and the public. Since the time of the audit, Transport Canada has improved how information on implementing our international obligations is made available to the public.

In 2007, the International Maritime Organization (IMO) conducted an audit of Canada's efforts to implement all of its conventions and found overwhelmingly positive results. A copy of the IMO's full report is presently being finalized and will be published on the Department's website for the information of all Canadians.

Foreign Affairs and International Trade Canada's response. Agreed. The Department is willing to work with relevant departments to explore ways by which lead and co-lead departments for international environmental agreements can promote better outreach to Parliament and Canadians on global environmental diplomacy.

Environmental agreements are listed in Foreign Affairs and International Trade Canada's Treaty Database

8.28 We reported in 1998 that there was no listing of international environmental agreements. As part of our work at that time, we created a comprehensive database of environmental agreements and commitments. In its response to our report, Foreign Affairs and International Trade Canada agreed to maintain the database.

8.29 In this audit, we found that although the Department has not maintained the comprehensive database, it is currently updating its Treaty Database (a listing that focuses on the formal aspects of all treaties Canada has signed, such as the in-force date, signatories and parties, and treaty text). This is available on a federal website and includes international environmental agreements. Although the database stores information on the lead negotiating departments involved, this information is not publicly available. We noted that the Treaty Database contains less publicly available information than the international environmental agreement database that we created in 1998. The latter provided, for example, the name of the lead federal department as well as an interpretation of key commitments under the agreement. The existing system requires users to contact the department for this type of information.

8.30 In addition to these databases, Environment Canada periodically produces a hard-copy compendium of the almost 60 agreements in which it plays a role. The latest published version is dated 2002. While not a complete listing of Canada's international environmental agreements, this document provides basic information on each listed agreement, such as objectives and commitments as well as contact information. It serves primarily as an internal reference tool. However, given its periodic nature, it does not include specific information on targets or results. In 2006, Environment Canada began work to update the compendium but, at the time of this audit, had not yet released it publicly.

8.31 Although Foreign Affairs and International Trade Canada has not maintained the more comprehensive international environmental agreement database, given that its Treaty Database lists all treaties including environmental agreements, we have assessed the government's progress in maintaining a listing of environmental agreements as satisfactory (Exhibit 8.3).

Exhibit 8.3 **Progress in addressing our finding on a listing of international environmental agreements is satisfactory**

Finding	Progress
There is a need for a comprehensive listing of the environmental and sustainable development commitments Canada has made. (1998 Report of the Commissioner of the Environment and Sustainable Development, Chapter 2, see paragraphs 2.73 to 2.82)	Satisfactory

Satisfactory—Progress is satisfactory, given the significance and complexity of the issue, and the time that has elapsed since the finding was made.

Unsatisfactory—Progress is unsatisfactory, given the significance and complexity of the issue, and the time that has elapsed since the finding was made.

World Summit on Sustainable Development monitoring and reporting

8.32 In 2002 (the 10th anniversary of the Rio Earth Summit), Canada was one of 200 nations that participated in the World Summit on Sustainable Development (WSSD). The key outcome was the *Johannesburg Plan of Implementation*, a comprehensive listing of over 600 commitments made by the participating nations.

Earth Summit 2002 Canadian Secretariat—The Earth Summit 2002 Canadian Secretariat was the federal government body that was created on a temporary basis to manage and coordinate Canada's preparations and participation in the World Summit on Sustainable Development. It disbanded on 31 March 2003.

Environment Canada, the Canadian International Development Agency, and Foreign Affairs and International Trade Canada were the co-leads for Canada in relation to the Summit process.

8.33 The Earth Summit 2002 Canadian Secretariat prepared a draft priority list of 46 commitments from the full *Johannesburg Plan of Implementation*. Had the list been approved by the Deputy Ministers' Environment and Sustainable Development Coordinating Committee, it would have become a first step in developing an action plan. However, it was never approved and the Secretariat was disbanded shortly thereafter, in early 2003. Examples of items from the Secretariat's proposed priority list included

- " . . . to halve, by the year 2015, the proportion of people who are unable to reach or to afford safe drinking water . . . "
- " . . . to achieve, by 2020, that chemicals are used and produced in ways that lead to the minimization of significant adverse effects on human health and the environment . . . "
- "[to] take immediate steps to make progress in the formulation and elaboration of national strategies for sustainable development and begin their implementation by 2005."

Canada still has no overall action plan to report on its priority WSSD commitments

8.34 In our reports from 2002 to 2005, we said that the federal government needs to develop an action plan to fulfill Canada's WSSD commitments. In our 2005 audit, we reported that the government still had not done so. We also reported that the Earth Summit 2002

Canadian Secretariat's proposed priority list identified lead and implementing departments and that some departments had incorporated their specific WSSD commitments into their 2004 sustainable development strategies. However, in this audit, our review of the 2007 strategies did not find any specific references to the WSSD, as were found in 2004. Departmental officials indicated that, while not specifically referred to as such in their strategies, they had included therein many of their commitments related to WSSD.

8.35 In addition, officials from Foreign Affairs and International Trade Canada, Environment Canada, and the Canadian International Development Agency (former co-leads of the Earth Summit 2002 Canada Secretariat) told us that it has become difficult to get WSSD on the agenda of **senior managers**. For example, although the United Nations Commission on Sustainable Development is the high-level body designed to follow up on commitments from the 1992 Earth Summit and the WSSD, there has been limited or no senior departmental management presence at recent meetings. The officials further stated that there has been no progress on

Senior managers—Deputy ministers, associate deputy ministers, and assistant deputy ministers who sit on departmental executive committees.

- formalizing the priority list of commitments by the Deputy Ministers' Committee on Economic Prosperity, Environment and Energy (which replaced the Deputy Ministers' Policy Committee on the Environment and Sustainability); and

- identifying a lead department that would have overall responsibility for following up on WSSD commitments.

8.36 Canada at the United Nations Commission on Sustainable Development. The UN established the Commission on Sustainable Development to follow-up world action on commitments from the 1992 Earth Summit as well as from the WSSD. In 2003, the Commission moved to a two-year cycle, focusing on one thematic cluster of related issues for each cycle (Exhibit 8.4).

8.37 Foreign Affairs and International Trade Canada coordinates Canada's participation at the Commission on Sustainable Development. For each thematic cycle, it identifies the federal departments and agencies that could be involved, leads an interdepartmental working group that meets regularly throughout the cycle, and oversees how the Government of Canada participates at the Commission each May. The working group produces and submits Canada's voluntary national report to the Commission during the review year of each cycle. The report is a detailed snapshot of activities for the current theme.

Exhibit 8.4 Following up on commitments made at the 1992 Earth Summit and at the 2002 WSSD

The United Nations established the Commission on Sustainable Development to follow up on commitments from the 1992 Earth Summit (notably *Agenda 21*, which is a comprehensive plan of action to be taken at all levels in every area in which humans affect the environment) as well as the 2002 WSSD. Rather than review progress on all commitments in *Agenda 21* and the *Johannesburg Plan of Implementation* every year, the Commission moved to a two-year cycle, focusing on a thematic cluster of related issues for each cycle.

2004 and 2005	Water, sanitation, and human settlements
2006 and 2007	Energy for sustainable development, industrial development, air pollution/atmosphere, and climate change
2008 and 2009	Agriculture, rural development, land, drought, desertification, and Africa
2010 and 2011	Transport, chemicals, waste management, mining, 10-year-framework of programs on sustainable consumption and production patterns
2012 and 2013	Forests, biodiversity, biotechnology, tourism, and mountains
2014 and 2015	Oceans and seas, marine resources, small island developing states, and disaster management and vulnerability
2016 and 2017	Overall appraisal of the implementation of *Agenda 21*, the *Programme for the Further Implementation of Agenda 21*, and the *Johannesburg Plan of Implementation*

The first year (review year) of each cycle gives countries the opportunity to report to the Commission on the activities they have undertaken for commitments relating to that cycle's theme. These national reports are integrated into the Secretary-General's thematic report to Commission members. The second year (policy year) focuses on helping countries to find ways to overcome barriers to their commitments, generally leading to policy recommendations.

The Commission seeks the cooperation of international bodies and inter-agency coordination mechanisms (such as UN Water) that have established monitoring and follow-up processes to monitor the commitments in each cycle thereafter. In addition, the Commission schedules follow-up reviews of previous themes.

Source: Commission on Sustainable Development, Report on the Eleventh Session (27 January 2003 and 28 April to 9 May 2003)

8.38 While this approach permits Canada to voluntarily monitor and report on progress made for the Commission's current thematic cycle, the federal government still has no action plan to ensure that Canada can report significant, concrete progress against commitments, while taking into account future cycles and the overall assessment in the final cycle. Without such a plan, it will be difficult for Parliament and Canadians to know how the government intends to meet its WSSD commitments, and the extent of any progress achieved. In our view, there is still a need for departments to work together to develop a government-wide, coordinated long-term plan. Given these findings, we have assessed the government's progress in planning, monitoring, and reporting on Canada's WSSD commitments as unsatisfactory (Exhibit 8.5).

Exhibit 8.5 Progress in addressing our finding on planning, monitoring, and reporting on Canada's WSSD commitments is unsatisfactory

Finding	Progress
Foreign Affairs and International Trade Canada, Environment Canada, and the Canadian International Development Agency need to plan, monitor, and report the extent to which Canada is meeting its WSSD commitments. (2005 Report of the Commissioner of the Environment and Sustainable Development, Chapter 7, see paragraphs 7.46 to 7.51)	Unsatisfactory

Satisfactory—Progress is satisfactory, given the significance and complexity of the issue, and the time that has elapsed since the finding was made.

Unsatisfactory—Progress is unsatisfactory, given the significance and complexity of the issue, and the time that has elapsed since the finding was made.

Conclusion

8.39 Progress by the four key departments we examined on providing complete, understandable, and easily available information on expectations and results for Canada's international environmental agreements is unsatisfactory. We found that the availability and fairness of information remain uneven.

8.40 Canada's progress in planning, monitoring, and reporting on its WSSD commitments is unsatisfactory. While efforts are being made to monitor and report progress on commitments in accordance with the UN's Commission on Sustainable Development, the government still does not have a government-wide, coordinated long-term action plan to ensure that it can report significant progress on commitments regarding *Agenda 21* and the *Johannesburg Plan of Implementation*, by the 2016–17 UN target date for overall assessment.

8.41 Although Foreign Affairs and International Trade Canada has not maintained the comprehensive international environmental agreements database, we are satisfied that its Treaty Database includes enough information on international environmental agreements to allow Canadians to make further searches.

About the Audit

Objective

The overall objective of the audit was to assess the progress that selected departments have made in responding to the underlying issues derived from certain recommendations, observations and commitments on reporting their activities and results regarding Canada's international environmental commitments.

Scope and approach

We focused our audit on selected recommendations, significant observations and government commitments arising from the 2004 Report of the Commissioner of the Environment and Sustainable Development (CESD), Chapter 1, International Environmental Agreements; the 1998 CESD Report, Chapter 2, Working Globally—Canada's International Environmental Commitments; and the 2005 CESD Report, Chapter 7, Sustainable Development Strategies. Specifically, our audit assessed

- whether Environment Canada, Fisheries and Oceans Canada, Transport Canada, and Foreign Affairs and International Trade Canada, with guidance and support from the Treasury Board Secretariat, have collectively made improvements in providing Parliament and Canadians with a complete and understandable picture of progress and anticipated results for Canada's international environmental agreements; and
- whether Foreign Affairs and International Trade Canada, Environment Canada, and the Canadian International Development Agency have made progress in planning, monitoring, and reporting the extent to which Canada is meeting its WSSD commitments.

Our approach included assessing 20 agreements, reviewing documents, and interviewing departmental officials. The selection was two-staged. We first identified the four departments designated as lead for the greatest number of agreements in Foreign Affairs and International Trade Canada's international environmental agreement database. The four departments were the lead for 93 of the 130 agreements listed. We then selected environmentally significant agreements from those departments to cover most of the key environmental issues such as biodiversity, water, and air. The agreements also had to have been ratified by Canada and be in force. The recent Stockholm Convention on Persistent Organic Pollutants was not yet in the database but we added it to our selection due to its environmental significance. We did not include the Kyoto Protocol to the United Nations Framework Convention on Climate Change since we had examined it in detail as part of our 2006 Report.

We asked the lead departments to provide information on the agreements based on the four categories used in the audit: obligations and objectives, programs and means, expectations and targets, and measuring and reporting results. These were derived from our 1998 study. We used this information as a foundation from which to assess the fairness and availability of information on the agreement. We did not audit the accuracy of the information provided.

We looked for the availability of clear, complete, understandable, and current information on how Canada is meeting its international obligations in the departments' tabled planning and reporting documents, required reports to international bodies, and in publicly available sources such as department websites.

International Environmental Agreements Selected

Environment Canada

- Agreement on the Conservation of Polar Bears
- Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and their Disposal
- Canada–U.S.A. Agreement on the Transboundary Movement of Hazardous Waste
- Canada–United States Air Quality Agreement
- Canada–United States Great Lakes Water Quality Agreement
- Convention on Biological Diversity
- Convention on International Trade in Endangered Species
- Convention on Long-range Transboundary Air Pollution
- Convention on the Protection of Migratory Birds in Canada and the United States
- Protocol to the Convention on Long-range Transboundary Air Pollution Concerning Emissions of Nitrogen Oxides
- Protocol to the Convention on Long-range Transboundary Air Pollution on Further Reduction of Sulphur Emissions
- Ramsar Convention on Wetlands
- Stockholm Convention on Persistent Organic Pollutants

Fisheries and Oceans Canada

- International Commission for the Conservation of Atlantic Tuna
- North Atlantic Salmon Conservation Organization
- Northwest Atlantic Fisheries Organization
- Pacific Salmon Treaty

Foreign Affairs and International Trade Canada

- Convention on the Conservation of Antarctic Marine Living Resources

Transport Canada

- International Convention and Protocol for the Prevention of Pollution from Ships (MARPOL 73/78)
- International Convention on Oil Pollution Preparedness, Response and Cooperation

Criteria

The following criteria for the audit were derived from the observations, recommendations (including the government response), and criteria from our 1998 study, and our 2004 and 2005 audits:

- The government has a system in place to keep track of Canada's international environmental agreements.
- The government has identified a lead department for each agreement and the name of the department is easily available to Parliament and Canadians.
- Lead departments for international environmental agreements have clearly identified and documented the environmental results they expect to achieve and how they will measure and report results achieved.

- The Treasury Board of Canada Secretariat has provided guidance and direction to departments on how to measure and report results and expected results against Canada's international environmental obligations.
- Lead departments have provided guidance to those responsible for international environmental agreements within the departments on how to measure and report results and expected results against Canada's international environmental obligations.
- The government has identified one or more lead departments for monitoring its commitments regarding the World Summit on Sustainable Development (WSSD).
- The government (or lead department) has developed a plan of action to ensure that Canada's commitments regarding the WSSD are being met.
- The lead department(s) for the WSSD regularly report(s) on progress in implementing commitments.

Audit work completed

Audit work for this chapter was substantially completed on 15 June 2007.

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Appendix List of recommendations

The following recommendation is found in Chapter 8. The number in front of the recommendation indicates the paragraph number where it appears in the chapter. The numbers in parentheses indicate the paragraph numbers where the topic is discussed.

Recommendation	Response
Availability and fairness of information	
8.27 As lead departments responsible for international environmental agreements, Environment Canada, Fisheries and Oceans Canada, Transport Canada, and Foreign Affairs and International Trade Canada should provide Parliament and Canadians with complete, understandable, and current information on objectives, means, expected results, and results. (8.9–8.26)	**Environment Canada's response.** Agreed. Environment Canada has various reporting methods, ranging from annual departmental performance reports to reports on plans and priorities and regular updating of the Department's international engagements posted on public websites to monitor and convey progress achieved. The Department will use the Report on Plans and Priorities, the Departmental Performance Report, and the Department's website to ensure information on its international environmental agreements' (IEA) objectives, means, anticipated results, and results achieved are transparently and effectively reported to Parliament and to Canadians. By fall 2008, the Departmental Performance Report will highlight information on the Department's IEA results achieved against the expected results. By spring 2009, the Report on Plans and Priorities will highlight information on the Department's IEA activities, plans, and priorities. By the end of March 2009, the Department will regularly post reports and updates on IEA progress on respective Environment Canada branch public websites, where appropriate. In addition, by the end of March 2008, the Department will use the recommendation, where applicable, as it updates its International Affairs website. **Fisheries and Oceans Canada's response.** Fisheries and Oceans Canada agrees with the recommendation as it relates to the active and key international agreements in which the Department is already involved. Internationally, the Department supports activities designed to lead to more responsible management of high seas fisheries and the sustainability of high seas ecosystems by seeking improvements to international governance. It is in this spirit that Fisheries and Oceans Canada participates in the Regional Fisheries Management Organizations.

Recommendation	Response
	On its websites, the Department will present up-to-date information with regards to the plans and measures taken by these organizations on environmental issues, and will define the roles of Canada with regard to them. The Department will also reflect the above information in a consistent fashion in its departmental reports to Parliament and to Canadians, such as the Report on Plans and Priorities, the Business Plan, the Departmental Performance Report, and relevant integrated fisheries management plans. These documents will be updated starting in the next fiscal year, while the websites will be updated in an ongoing manner and as a result of revisions to the above-mentioned documents. **Transport Canada's response.** Agreed. It should be noted that as these issues are complex, more than one department may be responsible for implementing an agreement for Canada under their respective mandates and legislation. The Department already makes information on activities related to international environmental agreements under its responsibility available to Parliament and the public. Since the time of the audit, Transport Canada has improved how information on implementing our international obligations is made available to the public. In 2007, the International Maritime Organization (IMO) conducted an audit of Canada's efforts to implement all of its conventions and found overwhelmingly positive results. A copy of the IMO's full report is presently being finalized and will be published on the Department's website for the information of all Canadians. **Foreign Affairs and International Trade Canada's response.** Agreed. The Department is willing to work with relevant departments to explore ways by which lead and co-lead departments for international environmental agreements can promote better outreach to Parliament and Canadians on global environmental diplomacy.

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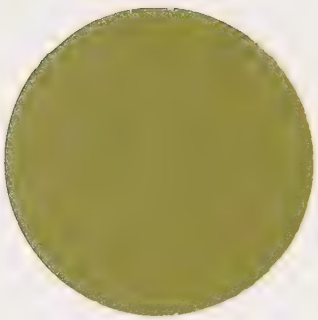
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Management Tools and Government Commitments

Chapter 9
Strategic Environmental Assessment

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The March 2008 Status Report of the Commissioner of the Environment and Sustainable Development comprises The Commissioner's Perspective—2008, Main Points—Chapters 1 to 14, Appendices, and 14 chapters. The main table of contents for the Report is found at the end of this publication.

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Chapter

9

Strategic Environmental Assessment

All of the audit work in this chapter was conducted in accordance with the standards for assurance engagements set by The Canadian Institute of Chartered Accountants. While the Office adopts these standards as the minimum requirement for our audits, we also draw upon the standards and practices of other disciplines.

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Management Tools and Government Commitments

Strategic Environmental Assessment

Main Points

What we examined

Strategic environmental assessment (SEA) has been required of federal departments and agencies for the past 17 years. It is the federal government's main tool for considering the impact that proposed policies, plans, and programs could have on the environment. A Cabinet directive in 1990 made SEA a requirement for proposals submitted to a minister or to Cabinet for approval when important environmental effects are likely. In 2004, Cabinet made public reporting mandatory whenever a detailed environmental assessment is completed.

Three times previously since 1998, we examined how departments and agencies comply with the Cabinet directive and we have reported weaknesses. This time we examined progress made by selected departments and agencies in implementing strategic environmental assessment since 2004, when we reported that most organizations we examined had not made serious efforts to apply the directive. We said that this was due in large part to insufficient senior management commitment to the directive, lack of central ownership, and no assignment of responsibility and authority to ensure the quality and consistency of the assessment process.

Our audit work for this status report focused on 15 departments and agencies covered in our 2004 audit. We looked at whether selected federal organizations have improved their management and application of SEA and whether they are reporting publicly on their detailed strategic environmental assessments, as required. We also examined whether there has been progress in ensuring accountability for compliance with the Cabinet directive. We looked at whether the Canadian Environmental Assessment Agency provides adequate guidance and support to departments and agencies. We also looked at selected courses offered by the Canada School of Public Service to determine whether they now cover strategic environmental assessment.

Why it's important

Identifying the potential environmental impacts of government policies, plans, or programs before they are implemented allows decision makers to anticipate, prevent, or mitigate potential negative environmental consequences and to enhance any environmental benefits. Our past

reports have highlighted problems such as the high cleanup costs and environmental damage at abandoned mines in the North and the decline of the Atlantic fisheries, which illustrate possible consequences of inadequate environmental foresight.

What we found

- Progress in addressing our 2004 audit observations and recommendations has been unsatisfactory. Despite improvements evident in some areas, we found weaknesses in accountability and transparency—areas fundamental to good management. We could not find evidence that a mechanism exists to hold departments and agencies to account when they do not appropriately apply the directive. Nor did we find evidence that the Privy Council Office challenged departments and agencies on their application of the directive when they have submitted proposals to Cabinet.
- Most of the departments we examined are not preparing public statements of their detailed environmental assessments, as required by the Cabinet directive. When public statements are released, they are generally difficult to locate and often do not contain sufficient information to assure stakeholders and the public that environmental factors have been integrated into the decision-making process—the stated objective of the requirement.
- Of the departments we re-examined that had rated poorly in our last audit, the Canadian International Development Agency and Fisheries and Oceans Canada have made satisfactory progress in developing and implementing SEA management systems. Health Canada's progress has been unsatisfactory.
- We observed deficiencies in completing and tracking strategic environmental assessments in many of the 12 departments whose management systems we examined in 2004. We found that many of these organizations do not consistently apply even the necessary first step of the SEA process. We also found proposals that did not have a detailed SEA, despite the potential for important environmental effects. Furthermore, only 3 of the 12 organizations are complying fully with the public reporting requirement of the directive.
- Training and guidance on SEA has increased and is accessible in courses delivered by the Canada School of Public Service and the Canadian Environmental Assessment Agency. In addition, the three organizations we examined in detail, the Canadian International Development Agency, Fisheries and Oceans Canada, and Health Canada, also provide their employees with training and guidance.

Introduction

9.1 A strategic environmental assessment (SEA) is used to examine policies, plans, or programs to ensure that, before they are approved, their potential effects on the environment are considered carefully. The Government of Canada uses SEA as its main tool to integrate environmental considerations into new policies, plans, and programs.

9.2 *The Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals* (issued in 1990 and revised in 1999 and 2004), made it mandatory for all departments and agencies to assess the environmental impact of proposals. The directive states that

> . . . ministers expect a strategic environmental assessment to be conducted when . . . the proposal is submitted to an individual minister or Cabinet for approval, and implementation of the proposal may result in important environmental effects, either positive or negative.

9.3 SEA is an important tool that allows decision makers to systematically assess the positive and negative environmental impact of a proposed policy, plan, or program. A commitment to sustainable development requires that environmental issues be considered along with social and economic ones. SEA is an important part of this integrated decision making because it generates information about environmental effects that can be used when policies, plans, and programs are developed.

9.4 For example, if the federal government develops a policy on offshore oil and gas exploration and development, it must consider the economic and social objectives (such as increasing the gross domestic product and/or employment opportunities) and the factors that would affect the policy's success (such as compatibility with other economic activities and impact on local communities). SEA would identify the positive and negative environmental implications of the policy (such as disturbance of marine life by seismic surveys and damage to marine habitat from oil spills and drilling waste). It would also identify mitigation options, after which mitigation measures could be incorporated into all project environmental assessments and put into practice when a project is implemented.

9.5 Decision makers must consider social, economic, and environmental information along with government priorities. By rigorously applying this tool, they increase their chances of anticipating, preventing, or mitigating negative environmental

consequences and enhancing any positive impact. In our past reports, we have noted serious environmental problems—including the high cleanup costs and environmental damage at abandoned mines in the North and the decline of the Atlantic fisheries—which illustrate the potential consequences of inadequate environmental foresight.

9.6 When the Cabinet directive was first issued in 1990, it covered the environmental assessment of policy and program proposals. In 1999, the scope of the directive was amended to include the environmental assessment of plans. It was amended again in 2004 to include a requirement that, after a detailed SEA is done, a public statement be made. Strategic environmental assessment should not be confused with the environmental assessment of physical projects, commonly referred to as environmental impact assessment, which is a separate process governed by the *Canadian Environmental Assessment Act* (Exhibit 9.1).

9.7 Since 1999, the importance of the Directive has been emphasized by the Clerk of the Privy Council and by the House of Commons Standing Committee on the Environment and Sustainable Development. The Committee's 2003 report, *Sustainable Development and Environmental Assessment—Beyond Bill C-9*, affirmed the importance of strategic environmental assessment but noted various problems with its implementation and recommended that SEA be legislated.

Exhibit 9.1 Differences between strategic environmental assessment and environmental impact assessment

Strategic environmental assessment	Environmental impact assessment
The focus is on the environmental impact of policies, plans, and programs. Strategic environmental assessment is mandated by the *Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals.*	The focus is on the environmental impact of physical projects. Environmental impact assessment is mandated by the *Canadian Environmental Assessment Act* and associated regulations (for example, comprehensive study list regulations, exclusion list regulations, inclusion list regulations, and law list regulations).
Examples of when strategic environmental assessment is applied	**Examples of when environmental impact assessment is applied**
A transport or infrastructure policy or program	Building a highway
An aquaculture policy or plan	Establishing an aquaculture operation
An energy policy or program	Constructing an oil sands facility
A tax policy for non-renewable and renewable energy	Developing a wind farm

9.8 Given the expressed importance of this issue, we decided to once again examine the federal implementation of SEA to determine whether the government has made progress in addressing key observations and recommendations from our 2004 audit.

What we found in 1998, 2000, and 2004

9.9 In 1998, 2000, and 2004, we audited how departments and agencies comply with the Cabinet directive, and we reported ongoing weaknesses. In Chapter 6 of the 1998 Report of the Commissioner of the Environment and Sustainable Development, we recommended that the Canadian Environmental Assessment Agency work with federal entities to improve compliance. In 2000, we reported that there had been no visible improvements.

9.10 In 2004, we reported a low level of commitment toward SEA, (2004 Report of the Commissioner of the Environment and Sustainable Development, Chapter 4). In our opinion, this was due in large part to

- insufficient commitment by senior management,
- lack of central ownership, and
- no assignment of responsibility and authority to ensure the quality and consistency of the assessment process.

9.11 We made several recommendations for improvements in departmental management, central monitoring and quality control, transparency, and training. We also reported examples of good practices in several departments and agencies.

Events since 2004

9.12 Two upcoming government initiatives could be crucial in determining the future course of the SEA process within the federal government.

9.13 In our 2004 report, we recommended that the Cabinet directive be evaluated, and we outlined what we expected the evaluation to address—namely, the issues raised in our report and the status of implementation by all departments and agencies. In response, the Privy Council Office, with federal departments and agencies, made a commitment to ensuring that an evaluation of the directive would be completed by December 2008.

9.14 We also stated that, based on the evaluation, the Privy Council Office should examine the design of the Cabinet directive and decide

whether legislation is warranted. The government's response noted that the evaluation "will inform decisions about the form and structure of the Cabinet Directive."

The **Regulatory Advisory Committee** advises the Minister of the Environment on regulations and guidelines that fall under the *Canadian Environmental Assessment Act* and on environmental assessment policy in Canada. It also takes part in periodic reviews of the Act and its regulations.

9.15 The Minister of the Environment has asked the Regulatory Advisory Committee (RAC) to recommend ways to improve the SEA process. A RAC subcommittee was established for this purpose and is expected to report to the Minister in 2008—before the *Canadian Environmental Assessment Act* is due to be reviewed by 2010.

Focus of the audit

9.16 This follow-up audit examined the actions that 15 departments and agencies have taken to address recommendations and key observations from our 2004 audit.

9.17 We followed up on the issues addressed by four of the five recommendations from our 2004 report. The four recommendations focused on

- improving how departments and agencies manage and apply SEAs,
- increasing transparency,
- improving accountability by establishing central monitoring of SEA compliance and quality, and
- increasing training.

9.18 It was too early to follow up on our fifth recommendation, which called for an evaluation of the Cabinet directive. The government made a commitment to complete the evaluation by December 2008.

9.19 We also looked for improvements in general weaknesses we observed in 2004 related to issues such as central leadership, guidance, and accountability.

9.20 More details on the audit objectives, scope, approach, and criteria are in **About the Audit** at the end of this chapter.

Observations

Strategic environmental assessment process

9.21 The *Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals* requires all departments and agencies to assess the environmental impact of policy, plan, or program proposals. Strategic environmental assessment is a self-assessment process, meaning that the federal department or agency that is developing a proposal is responsible for determining whether a detailed SEA is needed. According to guidelines that were jointly published by the Privy Council Office and the Canadian Environmental Assessment Agency, the SEA process has three key components:

- preliminary scan—necessary to screen all policy, plan, or program proposals to determine whether there is the potential for important environmental effects that requires a detailed SEA;
- detailed assessment—required if the preliminary scan identifies important environmental effects; and
- public statement—required once the detailed assessment has been completed.

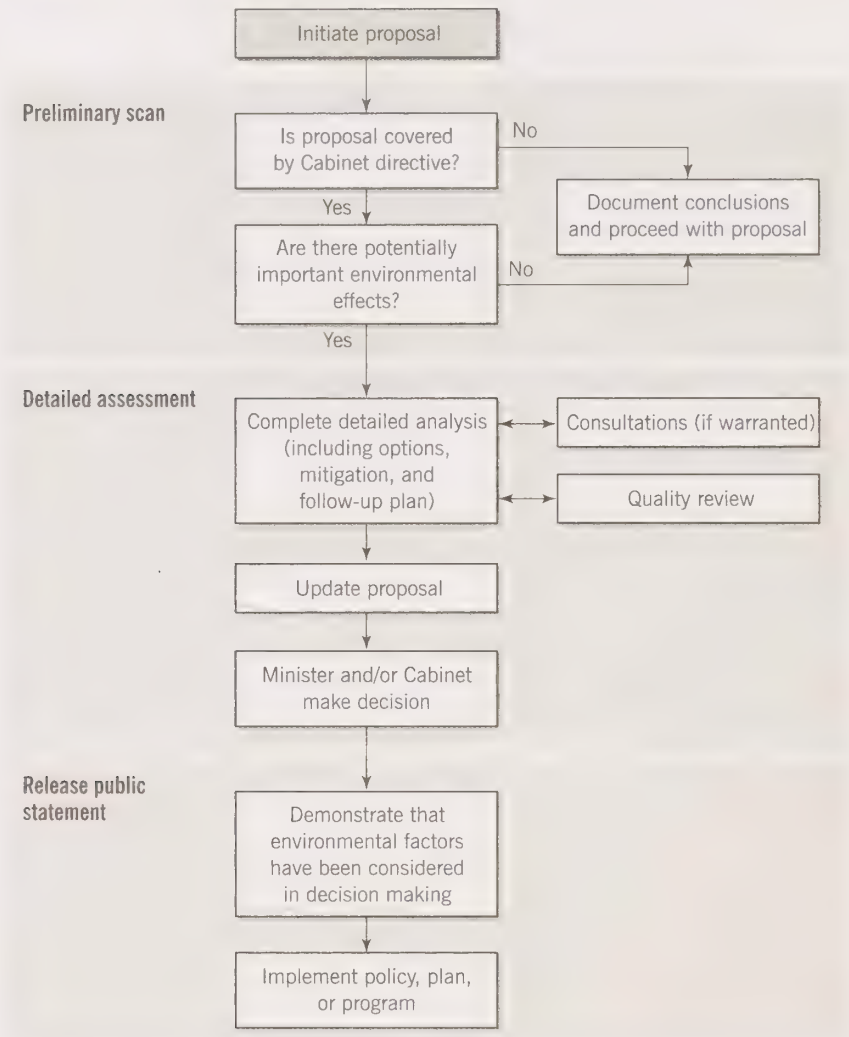
9.22 Deputy heads of federal departments and agencies are responsible for putting an effective system in place to ensure compliance with the Cabinet directive. Exhibit 9.2 outlines generic steps in the SEA process. Department management systems are key to ensuring that tasks are completed and the directive is applied throughout the process to ensure due diligence. Our 2004 report defined the following key elements of SEA management systems:

- clear accountability structures;
- systems to track proposals and associated SEAs;
- training and guidance for staff; and
- mechanisms for quality control, communication, and evaluation.

Two organizations that did not have management systems in place in 2004 have made satisfactory progress

9.23 In 2004, we audited selected departments and agencies on their ability to apply the directive in their organizations, through the design and implementation of SEA management systems. We reported that many organizations had made progress in developing and implementing their management systems.

Exhibit 9.2 **Generic steps in the strategic environmental assessment process**



Sources: 2004 Report of the Commissioner of the Environment and Sustainable Development, Chapter 4, Exhibit 4.4, and *Guidelines for Implementing the Cabinet Directive*, published by the Privy Council Office and the Canadian Environmental Assessment Agency (2004)

9.24 However, we also reported that three organizations—the Canadian International Development Agency, Fisheries and Oceans Canada, and Health Canada—lacked even the basic management system needed to apply the directive. We recommended that all departments and agencies ensure that their organization has a management system in place for the proper application of the directive. The government responded that departments and agencies would ensure that appropriate management systems would be in place by December 2005.

9.25 For this follow-up audit, we expected the three organizations to have made satisfactory progress in addressing our 2004 recommendation. We assessed the design and implementation of their management systems—using the same method we used in our 2004 audit.

9.26 Canadian International Development Agency (CIDA). We found that CIDA has made satisfactory progress in developing and implementing its SEA management system, which included all of the key elements that are described in Exhibit 9.2. The CIDA President played an essential leadership role in bringing about this change. The President's 2004 Implementation Directive clearly sets out expectations for the SEA process at CIDA. In addition, all policy, plan, and program proposals must be reviewed for compliance with the Cabinet directive and then signed off by the President's office. Proposals have been returned unsigned, when documents were not completed in accordance with the directive. We found that, since 2004, CIDA has completed 89 detailed SEAs—far more than any other department or agency we audited.

9.27 Fisheries and Oceans Canada. We found that Fisheries and Oceans Canada has made satisfactory progress in developing and implementing its SEA management system. In 2005, the Department approved a management system with defined roles and responsibilities, and it now offers training to its employees. Senior management receives updates on the performance of the Department's SEA system. While all key management system components are in place, we observed some deficiencies in the way SEAs are tracked.

9.28 Health Canada. We found that Health Canada has made unsatisfactory progress in developing its SEA management system (Exhibit 9.3). Since 2004, the Department has approved a guidance document and developed a training program, but the following important weaknesses remain:

- roles and responsibilities for quality review have not been clearly defined,
- it is unclear who is responsible for tracking proposals, and
- there is no effective central filing of SEA documents.

9.29 There is limited evidence that the Department applies the directive; it has only completed one detailed SEA in the 17 years since the directive has been in place. Department documents indicate that of the 143 proposals undertaken since 2004, only 11 have been subject to a preliminary scan (the first step in the SEA process described in Exhibit 9.2).

Exhibit 9.3 Progress made by two out of three organizations in addressing our recommendation on implementing SEA management systems is satisfactory

Recommendation
Deputy heads should ensure that their organization has a management system in place for the proper application of the directive. This system should include the following steps: • Identify and describe proposals that require approval by the departments' or agencies' minister or the Cabinet. • Establish an organizational accountability structure. • Develop and implement tracking systems to track all proposals subject to the directive, preliminary scans, and detailed assessments that are conducted. • Provide internal guidance and training to managers and staff who are involved in the preparation of policy, program, and plan proposals. • Establish quality control, consultation, communication, follow-up, and evaluation procedures. (2004 Report of the Commissioner of the Environment and Sustainable Development, Chapter 4, see paragraph 4.47)

Department/agency	Progress
Canadian International Development Agency	Satisfactory
Fisheries and Oceans Canada	Satisfactory
Health Canada	Unsatisfactory

Satisfactory—Progress is satisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation was made.

Unsatisfactory—Progress is unsatisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation was made.

The Cabinet directive is still unevenly applied

9.30 In 2004, we reported that none of the departments and agencies we examined could demonstrate that they had conducted a preliminary scan of all the proposals they presented to their minister or to Cabinet. We also noted that, in some cases, the departments were not preparing SEAs for proposals that could have important environmental effects.

9.31 During this follow-up audit, we looked at information produced by the SEA management systems of the departments we examined in 2004 (see **About the Audit** at the end of this chapter for a list of these departments and agencies). We expected these systems to adequately identify policies, plans, and programs that require a detailed SEA.

9.32 However, we again found examples of proposals that did not have a detailed assessment, despite the potential for important environmental effects. Among those examples were a proposal related to the export and import of hazardous waste and proposals for changes to emissions regulations.

9.33 According to *Smart Regulation: A Regulatory Strategy for Canada* (2004), a report by the **External Advisory Committee on Smart Regulation**, not completing SEAs can lead to some of the problems that may occur during the environmental impact assessment of individual projects.

The **External Advisory Committee on Smart Regulation** was established in 2003 to provide an external perspective and expert advice to the Government of Canada on the best way to improve the Government's regulatory system and better meet the needs of Canadians and Canada in the 21st century.

9.34 For example, the report noted that public consultations for many environmental impact assessments are slowed down because they focus on policy (for example, whether to drill for oil and gas off Canada's Atlantic coast), rather than on the environmental viability of a specific project (for example, studying the impact of a specific drill site).

9.35 According to their report, these broader public policy debates not only divert attention from a specific project, they also add to the time delays inherent in many environmental impact assessments for those projects. In the Committee's view, completing a strategic environmental assessment first could allow the department or agency to proceed with an environmental impact assessment without revisiting public policy decisions.

9.36 When we examined the lists provided by the 12 organizations, we found several other examples of deficiencies in their management and tracking systems:

- The organizations have collectively developed over 1,600 policy, plan, and program proposals since 2004. However, preliminary scans—the first step in the SEA process (see Exhibit 9.2)—were not completed for almost half of these.
- Several departments completed preliminary scans for less than one third of their proposals.
- In some cases where departments had jointly produced a proposal, the information on whether a strategic environmental assessment was completed was contradictory. For example, while one

department's list showed that their partner had completed a detailed SEA, the partner department's list did not include it.

9.37 Given the deficiencies we continue to observe, it is our opinion that many of the current SEA management systems are not adequately supporting the proper application of the Cabinet directive.

Transparency of the strategic environmental assessment process

9.38 In 2004, we reported that the directive was not being applied in a transparent manner. We stated that greater transparency could help to improve the quality of assessments, inform public debate, and enhance accountability. The House of Commons Standing Committee on Environment and Sustainable Development came to similar conclusions in its 2003 report, *Sustainable Development and Environmental Assessment—Beyond Bill C-9*. In this report, the Committee noted that it had "difficulty assessing the current level of compliance with the revised 1999 Cabinet directive given that virtually no information about strategic environmental assessments is publicly available."

Most organizations we examined do not comply with the directive's public reporting requirement

9.39 The Cabinet directive was modified in January 2004 to require that, after they conduct a detailed SEA, departments and agencies release a public statement of environmental effects. The directive does not prescribe the contents of these statements. It simply states that releasing a public statement "will assure stakeholders and the public that environmental factors have been appropriately considered when decisions are made."

9.40 The Canadian Environmental Assessment Agency and the Privy Council Office published guidelines for carrying out the directive that do not specify a preferred approach to public reporting. These guidelines state that departments will determine the content and extent of the public statement, according to the circumstances of each case, and that such statements should be integrated into existing reporting mechanisms. The Agency has since developed further guidance on public statements, suggesting that the statement summarize the SEA results, including

- whether environmental effects are positive or negative;
- what enhancement, mitigation, or follow-up measures need to be taken; and
- what the results of any consultations are.

9.41 In this follow-up audit, we determined whether the departments and agencies whose management systems we audited in 2004 were making public statements. (For the names of these departments and agencies, see **About the Audit** at the end of this chapter.) We expected to find that, as required by the directive, departments and agencies publicly report the results of all their detailed SEAs. We also expected to find that these statements are sufficient to assure stakeholders and the public that environmental factors have been appropriately considered when decisions are made.

9.42 We found that most of the departments and agencies we examined are not preparing public statements for all of the detailed strategic environmental assessments they have completed:

- Collectively, the organizations we audited indicated to us that they had completed over 150 detailed strategic environmental assessments since 2004. However, we were only able to confirm 124.
- Only three of the twelve organizations (Agriculture and Agri-Food Canada, Foreign Affairs and International Trade Canada, and Transport Canada) could demonstrate that they had released public statements for all detailed assessments that they had completed (six in total).
- Four of the twelve organizations had reported publicly on only some of their detailed SEAs. For example, the Canadian International Development Agency had published the results of 20 of its 89 detailed strategic environmental assessments.
- Five of the organizations had not made public statements about any of the detailed SEAs they had completed.

9.43 Departments and agencies must consider whether their SEAs contain Cabinet confidences, which would require secure treatment of that information. If this is the case, they should obtain legal advice to determine what information may be released. In some instances, this has delayed public reporting.

9.44 **Incomplete public statements.** When public statements are released, they often lack sufficient information to show how environmental factors have been taken into account during the decision-making process. Many statements do not indicate whether an SEA was undertaken, nor do they identify the potential for important positive or negative environmental effects. They also may not indicate

how these effects were factored into decisions related to the proposal. Some public statements refer broadly to potential "environmental benefits" without elaborating.

9.45 The present approach to public reporting does not adequately respond to our 2004 recommendation that was aimed at promoting transparency. Neither does this approach respond to the express intent of the directive itself—to assure stakeholders and the public that environmental factors have been appropriately considered when decisions are made.

9.46 **Lack of central, easy access to public statements.** In 2004, we recommended that the Canadian Environmental Assessment Agency create an easily accessible public registry of public statements on strategic environmental assessments, and we outlined what it should contain. The government responded that

> federal departments and agencies, under the leadership of the Canadian Environmental Assessment Agency, will work over the coming year to ensure that public statements of environmental effects are easily and centrally accessible.

9.47 The government made a commitment to review options and implement the selected option by September 2005. We expected federal departments and agencies, under the leadership of the Canadian Environmental Assessment Agency, to have met the commitment to making public statements of detailed SEAs easily and centrally accessible. We found that progress in meeting this commitment was unsatisfactory (Exhibit 9.4). The government decided to make public statements centrally accessible through the Agency's website, an option it implemented in February 2007. At the end of our audit, only five departments were using the Agency's central website to link to public statements in the SEA sections on their own websites. Only 26 public statements—less than a quarter of the detailed SEAs the departments and agencies had completed since 2004—were centrally and easily accessible.

9.48 Using basic search methods— the only ones that would be available to the general public—we were unable to find most of the other public statements that departments and agencies said they had completed.

Exhibit 9.4 Progress in addressing our recommendation to increase transparency is unsatisfactory

Recommendation	Progress
The Canadian Environmental Assessment Agency should develop and implement an easily accessible public registry of public statements on strategic environmental assessments. Departments and agencies would retain responsibility for the quality, timeliness, and accuracy of posted information. This registry should provide the following information: • A list of major approved government policies, programs, and plans where preliminary assessments determined that no strategic environmental assessment was required, along with the rationale for why no assessment was conducted. • Key information on strategic environmental assessments for which consultations on an initiative are ongoing or which have been approved by ministers or the Cabinet. This information would include key environmental impacts identified, a summary of the results of analyses undertaken, the results of any consultations, and whether any follow-up is required—elements which are identified in the directive's guidelines. In addition, the registry should include all strategic environmental assessments that are publicly released. (2004 Report of the Commissioner of the Environment and Sustainable Development, Chapter 4, paragraph 4.72)	Unsatisfactory

Satisfactory—Progress is satisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation was made.

Unsatisfactory—Progress is unsatisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation was made.

Central monitoring, leadership, and support

9.49 In its 2003 report, *Sustainable Development and Environmental Assessment—Beyond Bill C-9*, the House of Commons Standing Committee on Environment and Sustainable Development noted that the

> Privy Council Office has declined responsibility for implementing the 1990 and 1999 Cabinet directives, relying on the Canadian Environmental Assessment Agency, which has virtually no authority to ensure that federal departments (let alone ministers) comply.

9.50 The Committee also noted that the Privy Council Office, "which serves as the prime minister's department as well as the secretariat for Cabinet, must take a leadership role if strategic environmental assessments are to be effective."

9.51 In 2004, we reported that central agencies demonstrated a lack of leadership and support, which contributed to the low level of commitment in departments and agencies to carrying out the Cabinet

directive. We also noted that the directive and its guidelines do not assign overall responsibilities for monitoring compliance with the directive. To improve accountability, we recommended in 2004 that the Privy Council Office ensure that responsibilities and authorities have been assigned for central monitoring of compliance, quality control, and continual improvement of the assessment process.

9.52 The Privy Council Office did not accept our recommendation; it responded that

> Consistent with the federal government's commitment to self-assessment . . . departments and agencies will continue to be accountable for the quality of their analysis and will establish appropriate management systems to ensure accountability and quality control. When proposals are submitted to Cabinet for decision, central agencies have an important challenge function to play.

Accountability is weak

9.53 For this follow-up audit, we expected to see evidence that the existing accountability framework, as described by the Privy Council Office, was working. We looked for evidence that departments and agencies are held accountable when they fail to appropriately apply the directive. An acceptable accountability framework includes

- clear roles and responsibilities,
- clear performance expectations,
- credible reporting, and
- reasonable adjustment and review.

9.54 We also expected the Privy Council Office to perform its challenge function when policy, plan, or program proposals are submitted to Cabinet.

9.55 During this audit, the Privy Council Office informed us that, according to the existing accountability framework, departments and agencies are responsible for complying with Cabinet decisions and are accountable to Parliament.

9.56 To assess the 12 departments' and agencies' accountability to Parliament, we examined documents that they recently tabled in Parliament to see whether they report on compliance with the Cabinet directive. For each organization, we looked at the

- March 2006 Departmental Performance Report (DPR),

- 2007–08 Report on Plans and Priorities (RPP), and
- two most recent sustainable development strategies (2004 to 2006 and 2007 to 2009).

9.57 We noted that the Treasury Board of Canada Secretariat's reporting guidelines for the DPR and RPP do not indicate whether to report on or how to report on strategic environmental assessments. The Secretariat encourages departments and agencies through its RPP and DPR guidelines to focus on the critical aspects of planning and performance, which each organization must determine for itself. However, the 2004 *Guidelines for Implementing the Cabinet Directive*, which were jointly published by the Privy Council Office and the Canadian Environmental Assessment Agency, state

> When reporting on sustainable development goals in Sustainable Development Strategies, Reports on Plans and Priorities, or Departmental Performance Reports, departments and agencies should report on the extent and results of their environmental assessment practices.

9.58 We found that many of the organizations we examined did not provide information on their compliance with the Cabinet directive in the documents that they tabled in Parliament. For those that provided some information on their SEA activities, most of the information was insufficient to demonstrate compliance with the Cabinet directive.

9.59 In our view, the existing accountability framework is producing unsatisfactory results (Exhibit 9.5). We could not find evidence that a mechanism exists to hold departments and agencies to account when they do not appropriately apply the directive. Nor did we find evidence that the Privy Council Office challenged departments and agencies on their application of the directive when they submitted proposals to Cabinet.

The Canadian Environmental Assessment Agency continues to fulfill its role

9.60 According to the 2004 *Guidelines for Implementing the Cabinet Directive*, the Canadian Environmental Assessment Agency's role is

- to support the Minister of the Environment in promoting the use of SEAs; and
- with other departments and agencies, to provide guidance and training to improve the process.

Exhibit 9.5 Progress on ensuring accountability for implementing the Cabinet directive is unsatisfactory

Finding	Progress
The Cabinet directive and its guidelines do not assign overall responsibilities for monitoring compliance with the directive to ensure that deputy heads are held accountable. (2004 Report of the Commissioner of the Environment and Sustainable Development, Chapter 4, see paragraph 4.49)	Unsatisfactory

Satisfactory—Progress is satisfactory, given the significance and complexity of the issue, and the time that has elapsed since the finding was made.

Unsatisfactory—Progress is unsatisfactory, given the significance and complexity of the issue, and the time that has elapsed since the finding was made.

9.61 In 2004, we reported that the Agency was fulfilling its assigned role, and given the significance of this role, we expected it to continue to do so. In this follow-up audit, we found that the Agency is continuing to fulfill its role.

9.62 Since 2004, in collaboration with departments and agencies, the Agency has

- organized a major workshop,
- held several training sessions, and
- developed guidance documents.

9.63 The Agency also monitors memoranda to Cabinet to promote the application of the Cabinet directive. Where necessary, the Agency suggests changes. However, it has no authority to require changes.

Training has increased

9.64 In 2004, we reported that more training was needed to support SEA efforts and recommended that the Canada School of Public Service assess how the Cabinet directive could be referenced in its courses. We expected it to have added information about SEA to selected courses.

9.65 We found that the Canada School of Public Service has integrated SEA information in several courses it offers to federal managers and policy makers (Exhibit 9.6). We also found that the Canadian Environmental Assessment Agency and the three departments and agencies we examined in detail—the Canadian International Development Agency, Fisheries and Oceans Canada, and Health Canada—offer training and guidance on the SEA process.

Exhibit 9.6 Progress in addressing our recommendation on improving training on SEAs at the Canada School of Public Service is satisfactory

Recommendation	Progress
4.85 The Canada School of Public Service should assess how the Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals could be referenced in the courses it offers to senior managers in the federal public service. At the very least, all policy courses should refer to the directive. (2004 Report of the Commissioner of the Environment and Sustainable Development, Chapter 4, paragraph 4.85)	Satisfactory

Satisfactory—Progress is satisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation was made.

Unsatisfactory—Progress is unsatisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation was made.

Conclusion

9.66 Except for some improvements in management systems and training, progress in addressing key observations and recommendations from our 2004 audit is unsatisfactory. Accountability and transparency—areas fundamental to the proper functioning of any initiative—remain weak. Given that the Cabinet directive has been in place for 17 years, and our first audit was almost 10 years ago, the government has had ample time to address the issues we noted previously.

9.67 The departments we examined all have some form of internal management system for undertaking strategic environmental assessments, but we still observed weaknesses in many of these systems, which undermine their effectiveness in adequately supporting the application of the directive.

9.68 Transparency is limited. Most of the departments we examined are not preparing public statements of their detailed environmental assessments, as required by the Cabinet directive. When public statements are released, they are generally difficult to locate and often do not contain sufficient information to assure stakeholders and the public that environmental factors have been integrated into the decision-making process—the stated objective of the requirement.

9.69 The present approach to public reporting does not address the recommendations made in our 2004 report, nor does it address the intent of the directive itself. As we said in 2004, greater transparency of the SEA process could help to increase the quality of assessments,

inform public debate, and enhance accountability. Given the important role that transparency plays in assuring accountability and the relative ease of implementing this requirement, we are not satisfied with the progress made to date.

9.70 Management systems themselves are not enough to guarantee that departments comply with the directive. The current accountability structure is weak. We could not find evidence that a mechanism exists to hold departments and agencies to account when they do not appropriately apply the directive. Nor did we find evidence that the Privy Council Office challenged departments and agencies on their application of the directive when they submitted proposals to Cabinet. In light of the ongoing weaknesses we observed in the application of strategic environmental assessments and compliance with the Cabinet directive, the evaluation we recommended in our 2004 report should be all the more important in guiding the future course of SEA within the federal government.

About the Audit

Objective

The objective of the audit was to determine whether selected departments and agencies have made satisfactory progress in addressing selected recommendations, observations, and commitments made to implement the *Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals*.

Scope and approach

This follow-up audit focused on selected recommendations and significant observations from the 2004 Report of the Commissioner of the Environment and Sustainable Development, Chapter 4, Assessing the Environmental Impact of Policies, Plans, and Programs.

Our audit work focused on 15 of the 16 departments and agencies we covered in our 2004 audit. In this follow-up audit, we did not look at the Treasury Board of Canada Secretariat, as our 2004 report did not include significant observations or any recommendations for the Secretariat.

We followed up on the issues addressed by four of the five recommendations from our 2004 report. We did not follow up on our recommendation calling for an evaluation of the Cabinet directive, because the government had made a commitment to complete an evaluation by December 2008 (see paragraph 9.13)

The four recommendations we followed up on focused on

- improving how departments and agencies manage and apply SEAs,
- increasing transparency,
- improving accountability by establishing central monitoring of SEA compliance and quality, and
- increasing training.

For each recommendation, we examined selected departments and agencies and focused on the following:

- We examined Fisheries and Oceans Canada, the Canadian International Development Agency, and Health Canada to determine whether they have made progress in developing and implementing management systems. We selected these departments and this agency because our 2004 audit reported that they had made unsatisfactory progress; each lacked even a basic management system (Recommendation 4.47).
- We determined whether the Canadian Environmental Assessment Agency, with the support of federal departments and agencies, is working to ensure that public statements of environmental effects are easily accessible through a public registry or by other means (Recommendation 4.72).
- We assessed progress made in ensuring accountability for compliance with the Cabinet directive (based on Recommendation 4.55).
- We examined selected courses offered by the Canada School of Public Service to determine whether they cover strategic environmental assessment (Recommendation 4.85).

Our follow-up of those recommendations also included looking at significant observations from our 2004 report. We examined the following 12 departments and agencies, whose management systems we assessed in 2004, to assess their compliance with the public reporting requirement of the Cabinet directive. We also looked at whether they are adequately identifying the policies, plans, and programs that require detailed SEAs and whether they were informing Parliament of their SEA activities.

- Agriculture and Agri-Food Canada,
- Canadian International Development Agency,
- Citizenship and Immigration Canada,
- Environment Canada,
- Finance Canada,
- Fisheries and Oceans Canada,
- Foreign Affairs and International Trade Canada,
- Health Canada,
- Industry Canada,
- Natural Resources Canada,
- Public Works and Government Services Canada, and
- Transport Canada.

We also determined whether the Canadian Environmental Assessment Agency provides adequate guidance and support to departments and agencies according to its assigned role.

Our approach included reviewing documents, reviewing information from departmental management systems, and interviewing departmental officials.

Criteria

The following criteria for the audit were derived from observations, recommendations, and criteria from the 2004 Report of the Commissioner of the Environment and Sustainable Development, Chapter 4; from the 2004 *Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals*; and from the 2002 Report of the Auditor General of Canada, Chapter 9, Modernizing Accountability in the Public Sector.

We expected to find the following:

- Fisheries and Oceans Canada, the Canadian International Development Agency, and Health Canada have made satisfactory progress in developing and implementing SEA management systems.
- Management systems adequately identify the policies, plans, and programs that require a detailed SEA.

- Selected departments and agencies have complied with the amendment to the Cabinet directive that requires a "public statement of environmental effects when a detailed assessment of environmental effects has been conducted."
- The Canadian Environmental Assessment Agency is working to ensure that public statements of environmental effects are easily and centrally accessible through a public registry or by other means.
- The allocation of responsibilities and authorities, as described by the Privy Council Office, are functioning appropriately to ensure that departments and agencies are complying with the directive.
- The Canadian Environmental Assessment Agency is providing adequate and timely direction, guidance, and support to departments and agencies.
- The Canada School of Public Service has integrated the directive in selected courses it offers to managers and policy makers in the federal public service.

Audit work completed

Audit work for this chapter was substantially completed on 31 May 2007.

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Status Report of the Commissioner of the Environment and Sustainable Development to the House of Commons—March 2008

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Chapter 10
Greening of Government Operations

Office of the Auditor General of Canada



2008



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MARCH

Management Tools and Government Commitments

Chapter 10
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The March 2008 Status Report of the Commissioner of the Environment and Sustainable Development comprises The Commissioner's Perspective—2008, Main Points—Chapters 1 to 14, Appendices, and 14 chapters. The main table of contents for the Report is found at the end of this publication.

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Chapter

10

Greening of Government Operations

All of the audit work in this chapter was conducted in accordance with the standards for assurance engagements set by The Canadian Institute of Chartered Accountants. While the Office adopts these standards as the minimum requirement for our audits, we also draw upon the standards and practices of other disciplines.

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Management Tools and Government Commitments

Greening of Government Operations

Main Points

What we examined

In its document *A Guide to Green Government*, published in 1995, the federal government provided guidance to departments preparing their first sustainable development strategies as they began to green their operations, policies, and programs. The Guide also incorporated the then recently developed Greening of Government Operations initiative.

We have since audited various aspects of the effort to green government operations and have found little progress to report. Most recently, in our 2005 chapter on green procurement, we said that central guidance and direction to departments on green procurement was inadequate, that Public Works and Government Services Canada had underused its potential to advance green procurement through standing offers used in purchasing, and that sustainable development strategies were not being used effectively as a tool to increase green procurement. We have also previously reported on the extent of government-wide guidance for departments preparing sustainable development strategies, such as in our 2005 chapter on sustainable development strategies, which described efforts to provide government-wide guidance including greening government operations.

Given this past work, for this status report we examined the progress made by the government in providing greening government operations guidance to departments preparing sustainable development strategies as well as the progress made by Public Works and Government Services Canada in greening commodity management.

Why it's important

As one of Canada's largest employers, purchasers, and landowners, the federal government has committed itself to being a leader in promoting environmental and sustainable development practices in Canada. It can significantly reduce the environmental impact of its operations by purchasing goods that are energy-efficient, or that are produced without using or releasing toxic substances, or that can be recycled. Its spending on green products and services can also stimulate innovation and increase their availability. Recently, as part of the latest round of sustainable development strategies, the government identified its

vehicle fleets, green procurement, and energy use in buildings as its three priority areas for greening operations.

What we found

- The government's progress toward providing departments preparing sustainable development strategies with guidance on greening their operations is unsatisfactory. The government-wide targets it produced for departments to use in preparing their strategies were non-specific, reiterated previous objectives, or were open to interpretation, and departments were not required to use them. As a result, departments did not incorporate the targets consistently in their strategies and the government is therefore not in a position to know what progress it is making in greening its operations.
- The government has placed a lot of emphasis on its new commodity management approach to procurement. Given the time elapsed since this new approach was put in place, we found that Public Works and Government Services Canada is making satisfactory progress in greening the commodities we examined, with the exception of its slow progress in developing the integrated comprehensive commodity management plans required by its Commodity Management Framework. In the absence of such integrated comprehensive plans, the Department cannot demonstrate whether it is achieving the optimal balance between greening and the other factors that must be considered in procurement, such as fairness to suppliers and cost savings.

Public Works and Government Services Canada (PWGSC) has responded. PWGSC has agreed with our recommendations and is taking action to address the concerns raised in the chapter. Its detailed response follows each recommendation throughout the chapter.

Introduction

10.1 The federal government describes itself as Canada's largest property owner, employer, and purchaser of goods and services. It manages some 45,000 buildings, operates more than 26,000 vehicles, and annually purchases close to $20 billion in goods and services. The size of its operations means that by "greening" them—practising environmentally sound management—the government could become a leader in this field.

10.2 Since the introduction of its Green Plan in 1990, the federal government has undertaken numerous initiatives and activities related to the greening of government operations (Exhibit 10.1). When launching several of these initiatives, the government stated its commitment to being an environmental leader and promoting sustainable development practices. For example:

- In its 1992 *Code of Environmental Stewardship*, the government committed to meet or exceed the letter and spirit of federal environmental laws.
- The government stated in its 1995 *A Guide to Green Government* that it wanted to play a leadership role in turning sustainable development thinking into action.
- The 1999 Sustainable Development in Government Operations initiative outlined how the government was striving to meet its commitment to leadership in environmental responsibility in its own operations.

10.3 The government's concept of greening government operations includes a wide range of activities, such as

- reducing energy and resource consumption by buildings and vehicles,
- reducing greenhouse gas and other air-polluting emissions,
- using green procurement,
- cleaning up contaminated sites, and
- improving waste management.

Green procurement—The purchase of goods and services that are less harmful to the environment and to human health than competing products and services. It includes

- looking at how needs can be met without new purchasing;
- choosing a manufacturer that can demonstrate good environmental management practices; and
- buying goods that are produced with fewer resources, do not use or release toxic substances, are energy efficient, or are easily disassembled for reuse and recycling.

10.4 After a number of other initiatives, the government created the Office of Greening Government Operations (OGGO) in April 2005 within Public Works and Government Services Canada (PWGSC). OGGO's mandate is to speed up the greening of government operations by working closely with the Treasury Board Secretariat and

Exhibit 10.1 **Key initiatives in the greening of government operations**



Sources: Greening Government Operations: Guidance for Organizations Developing Sustainable Development Strategies (2007–2009)
Government of Canada's Greening Government website

key federal departments that provide technical expertise, particularly Environment Canada and Natural Resources Canada. With an annual budget of approximately $10 million, OGGO was mandated to provide advice and guidance to departments on a wide range of activities related to the greening of their operations, including

- supporting the development of policy and performance management related to greening government operations; and

- providing a range of environmental services to government departments, such as providing advice and functional guidance in areas like green construction and waste management. (After this audit was completed, this role was consolidated within PWGSC's Real Property Branch. The Department believed that this would enable a greater focus on policies within OGGO.

OGGO's role included the development of a green procurement policy and the preparation of greening government guidance for departments preparing the fourth round of sustainable development strategies.

Sustainable development strategies—Twenty-eight federal departments and agencies are now required to submit a sustainable development strategy to Parliament every three years. The strategy outlines commitments to make environmental protection and sustainable development an integral part of their mandates. These organizations are also expected to report progress against the commitments that they set out in their strategies. An additional four departments and agencies each voluntarily prepare one.

What we previously found

10.5 We have maintained an ongoing interest in the government's efforts to green its operations. Since 1998, we have commented on a number of issues related to the lack of available information on greening operations, poor performance measurement frameworks, lack of progress in dealing with federal contaminated sites, the absence of a government-wide measurement strategy for office solid waste, and the lack of strong leadership in this area.

10.6 Most recently, in our 2005 chapter *Green Procurement*, we said that central guidance and direction to departments on greening their operations was inadequate, that Public Works and Government Services Canada had underused its potential to advance green procurement through standing offers used in purchasing, and that sustainable development strategies were not being used effectively as a tool to increase green procurement.

Events since 2005

10.7 In 2006, as an integral part of its *Coordinating the Fourth Round of Departmental Sustainable Development Strategies* document, the federal government released *Greening Government Operations: Guidance for Organizations Developing Sustainable Development Strategies (2007–2009)*. Jointly prepared by Public Works and Government Services Canada (PWGSC), Environment Canada, and the Treasury Board Secretariat, it provides guidance to federal departments and agencies on creating their strategies to achieve sustainable development in their operations.

10.8 Also in 2006, the government's *Policy on Green Procurement* came into force. It requires departments to consider environmental performance when buying goods and services. The government says the policy allows it "to green operations by considering not only what and how it purchases, but also how it uses, maintains and disposes of

acquired goods and services." The Policy requires that deputy heads ensure that their departments realize the objectives of green procurement. PWGSC supports the policy by establishing directives, standards, tools, guidance, and training. In addition, the Department is responsible for incorporating environmental performance considerations into the commodity management process. The Treasury Board Secretariat provides support and guidance for departmental planning and reporting while Environment Canada and Natural Resources Canada support PWGSC's role by providing environmental and technical expertise for the commodity management process.

Focus of the audit

10.9 The focus of this follow-up audit was to assess the progress selected departments have made in responding to the underlying issues derived from certain recommendations, observations, and commitments made in prior years with respect to certain aspects of greening government operations. The selected issues were derived primarily from our 2005 audit of green procurement while taking into account related points we have raised over the past 10 years. We focused on the following areas:

- The provision of strong leadership, central direction, and guidance on greening government operations to departments preparing sustainable development strategies. Our Office had previously commented on such guidance to departments on both an overall basis as well as how it specifically relates to green procurement. We focused on the overall guidance for this follow-up.

- Departmental action in response to the government-wide guidance on greening government operations.

- The greening of the commodity management process. Our 2005 green procurement audit covered a number of issues including the development of a green procurement policy and greening commodity management. We focused on the greening commodity management aspect for this follow-up.

We assessed progress, taking into consideration the complexity of addressing the issue and the time elapsed.

10.10 More details about the audit objectives, scope, approach, and criteria are in **About the Audit** at the end of this chapter.

Observations and Recommendations

Central direction and guidance for sustainable development strategies

10.11 In our 2005 audit, *Green Procurement*, we found that the government had not made full use of its sustainable development strategies to advance green procurement. We noted that for the selected departments' 2001 sustainable development strategies, the government had provided guidance for all aspects of greening government operations, including proposed targets and performance measures. For the 2004 strategies, the government did not provide guidance to departments on green procurement and we noted a decline in the number and measurability of green procurement commitments. Since all federal organizations buy goods and services, we indicated that it was possible to set some common objectives and targets. We recommended that Public Works and Government Services Canada (PWGSC) ensure that guidance on green procurement be developed in time for the departments' 2007 strategies, including a core set of practical and progressive green procurement objectives and targets.

10.12 In its response to our recommendation, PWGSC committed to working to develop, in time for the next round of sustainable development strategies, a core set of practical and progressive green procurement objectives, a common set of priorities and performance indicators, and a plan to improve green procurement reporting.

10.13 In addition to our observations directed to PWGSC, we have also reported on government-wide direction and guidance for departments preparing sustainable development strategies, which included greening government operations. In our 2005 chapter on sustainable development strategies, we noted that the government has tried to set some overall priorities for the departmental strategies, though these priorities have changed with each round. The 1997 strategies were influenced by the 1995 *A Guide to Green Government*, which set five objectives, including greening government operations. For their 2001 strategies, departments were provided with eight themes, which some departments worked into their strategies. For the 2004 strategies, we found that departments could not agree on priorities. A committee of deputy ministers that provides direction on the federal government's sustainable development priorities prepared a draft government-wide vision along with three priorities, including greening government operations. However, departments did not receive sufficient guidance on a timely basis to incorporate it into their 2004 strategies.

10.14 While in 2005 we examined green procurement, for this follow-up audit, we continued our ongoing interest in the broader and underlying issue of central direction and guidance on greening government operations to departments preparing sustainable development strategies. Following successive government announcements, we expected that such direction and guidance would be in keeping with the stature of the Government of Canada and would focus on providing leadership by example.

10.15 Specifically, we examined whether PWGSC, Environment Canada, and the Treasury Board Secretariat have made progress in providing central direction and guidance on greening government operations to departments preparing sustainable development strategies.

10.16 We expected that the government would have designated a lead department to coordinate central direction and guidance and would have established governance structures with well-defined roles, responsibilities, and accountabilities. After 15 years of government attempts to green government operations, we looked for the lead department together with the most significant departments to focus on results rather than on the process for implementing the government's stated intentions. We also expected that, consistent with sound management practice, the government would have identified priority areas and developed a government-wide performance measurement framework with common baselines (comparing current and future environmental status with the levels from a previous period) and meaningful and significant government-wide targets, reported on a consolidated basis. The lead department would have to work with other departments to develop government-wide green procurement targets, in addition to each department setting its own significant and meaningful targets for its sustainable development strategy, based on its mandate.

Guidance for strategies was optional and open to interpretation

10.17 One of the Office of Greening Government Operations's (OGGO) responsibilities was to work with Environment Canada and the Treasury Board Secretariat to provide greening government guidance for departments creating sustainable development strategies.

10.18 Each of the six main greening government operations areas has an interdepartmental steering group. Even though all six steering groups have met at least once, the process to develop the guidance only began in earnest in November 2005 after the three responsible

associate deputy ministers (for Public Works and Government Services Canada, Environment Canada, and the Treasury Board Secretariat) decided to focus on three priority areas: building energy, vehicle fleet emissions, and green procurement. The three steering groups concerned were asked to prepare discussion documents on priorities for government-wide targets for a departmental workshop held in December 2005.

10.19 In January 2006, the associate deputy ministers were briefed on the results of the workshop and the proposed direction for the sustainable development strategy guidance. The workshop discussions were to be used in developing the guidance. Discussions with the three steering groups and a selection of departments that submit sustainable development strategies were held in early 2006. The final version of the guidance was approved by the Deputy Ministers' Policy Committee on Environment and Sustainable Development on 29 March 2006. PWGSC, Environment Canada, and the Treasury Board Secretariat jointly issued the *Greening Government Operations Guidance* to departments on 7 April 2006.

10.20 The terminology used in the guidance left its use open to some interpretation by departments regarding the baseline levels to be used, the target definitions, the monitoring mechanisms, and the level of departmental commitment.

10.21 The guidance document states that all departments and agencies "are expected to" commit to the government-wide targets in their sustainable development strategy and to use the "recommended performance measures" in the guide. It adds that "the next step now greatly depends on departments and agencies adopting the common targets and common performance measures." This wording left open to departments the decision on how extensively they would apply the guidance.

10.22 OGGO officials stated that their responsibility was limited to providing guidance. At the Standing Committee on Government Operations hearing in February 2007, OGGO officials said they only provided greening government operations guidance to departments and could not force its implementation. As a result, we noted that of 28 mandatory departmental sustainable development strategies tabled for 2007, seven had included all the government-wide greening government operations targets, while the others had partially included them (see paragraph 10.36). OGGO carried out a number of activities, such as making presentations to interdepartmental committees, to promote the inclusion of the guidance into departmental strategies.

In this instance, since compliance with the guidance was optional, without departmental commitment to consistently apply the guidance, there was an increased risk that the government would not reach the "focused and coherent government-wide report on results achieved" that it sought.

10.23 The government can use a variety of levers to ensure departmental action, including regulations, policies, and Cabinet directives. For example, the 2006 *Policy on Green Procurement* requires that deputy heads ensure that their departments realize objectives of green procurement.

10.24 In our opinion, while the guidance for the 2007 sustainable development strategies is a step forward, because there was no guidance produced for the 2004 strategies, its optional nature does not facilitate a significant and meaningful greening of government operations, consistent with the leadership role the federal government has claimed for itself.

The government missed an opportunity to show leadership when setting targets

10.25 The federal government has long stated its commitment to lead environmental sustainability by example, beginning with the 1992 *Code of Environmental Stewardship*. More recently, its 2006 *Greening Government Operations Guidance* stated that the federal government would be recognized as a model of environmentally and economically sustainable government operations, and can help lead Canada to a long-term competitive advantage based on environmental sustainability. In February 2007, the Minister of Public Works and Government Services said that his department "is uniquely positioned to contribute to real progress in protecting the environment."

10.26 We examined how the government-wide targets were developed in the guidance for the three priority areas of building energy, vehicle fleet, and green procurement. The interdepartmental steering groups proposed targets for the three areas and OGGO, as the lead, coordinated the target development process.

10.27 **Building energy.** Early targets proposed by the building energy interdepartmental steering group to the departments tabling sustainable development strategies specified percentage reductions for the building energy targets. In 2006, at the end of the analysis and departmental consultation process, by consensus, specified percentage reductions were removed from the building energy targets in favour of more general targets that were significantly less aggressive.

10.28 These general targets were derived from the government's 2001 Federal House in Order (FHIO) initiative, which applied to the 11 departments and agencies that account for 95 percent of federal greenhouse gas (GHG) emissions. In 2001, those departments agreed to collectively reduce GHG emissions from their buildings and vehicles by 31 percent from 1990 levels by 2010. According to the latest published FHIO *Annual Report* (October 2004), the 11 departments and agencies had already reduced their emissions by 24 percent as of 2002. By asking the departments to "meet or exceed their FHIO target for buildings," the current targets for reducing energy consumption for these departments therefore reiterate targets they had already agreed to. Non-FHIO departments and those that lease their premises were asked to develop non-specified targets to reduce emissions in support of the FHIO. At the end of March 2007, three years before the target completion date, the government wound up the FHIO program and its annual reporting mechanism. With the end of the FHIO initiative and without a formal, consistent, and government-wide reporting mechanism, we are concerned that departments may not maintain their efforts to meet or exceed and report on their commitments.

10.29 Vehicle fleet. The vehicle fleet interdepartmental steering group's vehicle fleet target was inspired by the memorandum of understanding between the Government of Canada and the Canadian automotive industry in 2005, when manufacturers agreed to voluntarily reduce GHG emissions from their light-duty vehicles. The steering group understood the industry target in the agreement to be a 30 percent reduction by 2010. It established the target for the government vehicle fleet at half that—a 15 percent reduction in GHG emissions per vehicle kilometre from 2002–03 levels by 2010—and this target was mentioned in Budget 2007. The rationale was to set objectives that would "enable every department to meet this target." We could find no reference in the memorandum of understanding to a 30 percent target, nor could the government provide us with any calculation that would support it. As well, the steering group members could not provide us with other analyses to support the rationale for the chosen target, or the likelihood of its achievement.

10.30 Green procurement. The guidance contains no baseline or government-wide target for green procurement, other than training 100 percent of materiel management and procurement personnel on green procurement. Procurement targets were left to each department per the *Policy on Green Procurement*. The guidance states that departments "set a minimum of three green procurement targets over

three years." The Policy calls for departments to set green procurement targets tailored to reflect their mandates and departmental buying patterns. In addition to this focus on departmental goals, given that the government issued government-wide guidance for departments preparing sustainable development strategies, we believe that it could have explored opportunities for government-wide green procurement targets.

10.31 Considering that the guidance targets concerning building energy, vehicle fleet emissions, and green procurement are not specific, repeat previous objectives, or are left open to interpretation, we believe that the government has missed an opportunity to lead by example by setting aggressive targets and consistently measuring and reporting on overall progress.

Other nations have chosen more top-down approaches

10.32 The Canadian government has provided less direction from top officials in the area of greening its operations than some other countries. The following examples illustrate the top-down approach used by two other Western nations.

10.33 United Kingdom. In June 2006, after having completed a review of how the government manages its land and buildings, the Sustainable Operations Board of the United Kingdom released its latest version of targets that departments are expected to meet in three key areas: climate change and energy, sustainable consumption, and natural resource protection. The targets are issued in the name of the prime minister, agreed to by ministers, and the Environmental Audit Committee of the United Kingdom has the power to call ministers to account for their departmental performance. UK targets have a given time frame. For example, one of the climate change and energy targets is to reduce carbon emissions from government operations by 12.5 percent by 2010–11, relative to 1999–2000 levels. In addition, the Sustainable Development Commission, the government's independent watchdog, produces an annual report on government's progress in meeting these targets.

10.34 United States. In January 2007, the President of the United States released an executive order entitled *Strengthening Federal Environmental, Energy and Transportation Management*. This document ordered each federal agency to reach a series of environmental goals. The following are examples of goals in the executive order:

> "Improve energy efficiency and reduce greenhouse gas emissions of the agency, through reduction of energy intensity [of the

> agency] by (i) 3 percent annually through the end of fiscal year 2015, or (ii) 30 percent by the end of fiscal year 2015, relative to the baseline of the agency's energy use in fiscal year 2003."
>
> "Ensure that if the agency operates a fleet of at least 20 motor vehicles, the agency, relative to baselines for fiscal year 2005, (i) reduces the fleet's total consumption of petroleum products by 2 percent annually through the end of fiscal year 2015..."
>
> "Ensure that the agency (i) when acquiring an electronic product to meet its requirements, meets at least 95 percent of those requirements with an Electronic Product Environmental Assessment Tool (EPEAT)-registered electronic product..."

The document also ordered each agency to name a senior official as accountable for the execution of the order.

Varied measurement and reporting make consolidated reporting difficult

10.35 Given the importance the guidance places on the three areas of building energy, vehicle fleet emissions, and green procurement, we assessed how well the 28 departments and agencies that are required to provide sustainable development strategies responded to the guidance by incorporating the chosen targets into their strategies. The guidance document stated that all departments and agencies were "expected to commit to the 'government-wide targets' and to use the recommended performance measures."

10.36 We reviewed the 28 departmental sustainable development strategies to determine the extent to which departments and agencies had incorporated the government-wide greening government operations targets. We found that seven of these organizations had included all of the government-wide targets and the others had partially included them.

10.37 However, with respect to the recommended performance measures, even in those cases where the departments included the targets, they were not always worded in a manner consistent with the government-wide target. For instance, we found that many departments with Federal House in Order obligations stated their sustainable development strategy targets using varying baselines and measurements, such as actual amounts versus percentage reductions, which makes consolidated reporting difficult. For example, for the same objective, we found the following targets in two different departmental sustainable development strategies:

"Reducing greenhouse gas (GHG) emissions by 134.9 kilotonne carbon dioxide equivalent by 2010 from 1998 baseline."

"By 2011, reduce net departmental greenhouse gas emissions and energy consumption by 5 percent from 2004/2005 baseline."

10.38 The vehicle fleet government-wide target called for a 15 percent reduction in GHG emissions per vehicle kilometre from the 2002–03 baseline by 2010, but a number of departments did not mention a percentage reduction and some used different baselines or did not refer to a baseline.

10.39 The lack of a measurable government-wide green procurement target resulted in a wide range of specific targets that will make it virtually impossible to provide any meaningful picture of government-wide progress to Canadians and Parliament. Examples of specific targets from various departmental sustainable development strategies included the following:

"All procurement staff to have access to list of available green products."

"By March 31, 2008, green products account for 10 percent of total product spending."

"Green Furniture Purchases—Corporate Services Branch will increase purchases of green office furniture from 2005–06 levels by 50 percent where and whenever new fit-up [office construction] opportunities exist, and where current design configuration permits."

10.40 We followed up with three departments—Agriculture and Agri-Food Canada (AAFC), Public Works and Government Services Canada, and Transport Canada—to determine how far they integrated the government-wide greening government operations targets into their sustainable development strategies. We wanted to see if the departmental incorporation of the greening government operations targets would allow the information to be consolidated government-wide.

10.41 Agriculture and Agri-Food Canada. AAFC included all of the government-wide targets as suggested by the guidance in its sustainable development strategy. As a FHIO department, AAFC already had a performance measurement and reporting framework in place for buildings and fleet. AAFC has identified the data sources it will use to measure and report against all of its greening government operations targets in its strategy.

10.42 Public Works and Government Services Canada. PWGSC incorporated all of the government-wide targets into its sustainable development strategy. Its main building energy target was stated in terms of a percentage reduction of energy consumption and an associated reduction in greenhouse gas emissions from 2001–02 levels, whereas the target in the FHIO initiative uses 1990 levels as the baseline. A Department analysis showed how meeting its own target will allow it to substantially meet its FHIO target, but this would depend on making needed renovations to the central heating plant. In addition, the choice of a different baseline makes it difficult to consolidate with those of other departments.

10.43 Transport Canada. Transport Canada uses an internal Environmental Management System (EMS) to mitigate the environmental impacts of its operations and includes its EMS targets as an annex to its departmental sustainable development strategy. The Department partially included the greening government operations government-wide targets in its EMS: it did not include either the government-wide vehicle fleet target or a quantified green procurement target. The target for green procurement stated that the Department would "identify opportunities and take action to purchase greener goods and services by 2009." Transport Canada officials indicated that it also has internal targets that are not stated in its sustainable development strategy, such as specific actions to be taken on green procurement.

10.44 As a Federal House in Order department, Transport Canada included its FHIO target in its EMS. While the FHIO called for reducing emissions from vehicles and buildings, in the case of Transport Canada, its FHIO target is for vehicles only as it was in the process of selling some of its properties at the time of target negotiation.

10.45 Transport Canada has a measurement and reporting mechanism for its vehicle fleet as part of its FHIO commitment. The other EMS targets all have an associated performance indicator against which progress will be reported. However, the measures are not fully consistent with the guidance, which may make it difficult to consolidate them with information from other departments.

10.46 Conclusion. In our opinion, the efforts of these three departments typify the fragmented approach to government-wide reporting of its greening efforts. With a variety of different performance measures applied inconsistently among departments, Public Works and Government Services Canada, as the lead for greening government

operations, supported by its partners the Treasury Board Secretariat and Environment Canada, will be hard pressed to develop any coherent government-wide information on the results of its efforts.

There is no strategy to consolidate government-wide information

10.47 Given the complexity of bringing together information from 28 departments and agencies, we expected that the government would have a strategy to enable the consolidated reporting of progress against the government-wide targets. The guidance recognizes this by indicating that reporting in a consistent manner on the three priorities will make it easier to develop a government-wide report on these aspects of government operations.

10.48 Establishing consistent performance indicators with common target definitions and common baselines is a key first step to reporting on government-wide progress. OGGO recognizes the challenge of government-wide reporting given the lack of complete and consistent use of the government-wide targets by all departments preparing sustainable development strategies. There is as yet no plan for reporting on government-wide information. As described in paragraph 10.28, the FHIO program and its annual reporting mechanism for the building energy target were wound up on 31 March 2007. We also note that Public Works and Government Services Canada is currently leading the development of a Results-based Management and Accountability Framework for the Policy on Green Procurement that will support departmental reporting on their green procurement activities, one of the government's sustainable development strategy focus areas. Officials responsible for departmental sustainable development strategies told us that they have received no communication from guidance-issuing departments regarding the consolidation of information against the government-wide greening government operations targets.

10.49 In Chapter 1 of our October 2007 Report, we reported that the government still has not developed a federal sustainable development strategy, an outstanding commitment for more than 15 years. In addition, we stated that in the absence of a coherent set of goals, indicators, and expectations regarding progress, and a mechanism to enable the gathering and reporting of performance information, there is no basis upon which to objectively assess overall progress toward sustainable development strategy goals and that our view on this had not changed since our 2002 audit of sustainable development strategies.

Progress is unsatisfactory

10.50 Given that the guidance for strategies was optional and open to interpretation, that the government missed an opportunity to show leadership when setting targets, that the varied measurement and reporting make consolidated reporting difficult, and that there is no strategy to consolidate government-wide information, we have assessed the government's progress as unsatisfactory in providing central direction and guidance for greening government operations to departments preparing sustainable development strategies (Exhibit 10.2).

Exhibit 10.2 Progress in addressing our recommendation on central direction and guidance for greening government operations is unsatisfactory

Recommendation	Progress
Public Works and Government Services Canada, in cooperation with Environment Canada and the Treasury Board Secretariat, should provide practical and progressive central direction and guidance on greening government operations to departments for the 2007 sustainable development strategies. (2005 Report of the Commissioner of the Environment and Sustainable Development, Chapter 6, see paragraph 6.24.)	Unsatisfactory

Satisfactory—Progress is satisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation was made.

Unsatisfactory—Progress is unsatisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation was made.

10.51 Recommendation. Public Works and Government Services Canada (PWGSC), in consultation with the Treasury Board Secretariat, Environment Canada, and other departments and agencies as appropriate, should revisit the authorities, roles, responsibilities, and capacities for greening government operations, with a view to clarifying the leadership and responsibility for

- the provision of central direction and guidance on greening government operations for sustainable development strategies,
- the establishment of meaningful and aggressive government-wide targets for greening government operations, and
- the development of a government-wide strategy for monitoring and reporting on greening government operations.

PWGSC's response. PWGSC, on behalf of responsible departments and agencies, agrees with this recommendation. Building on past successes, PWGSC, in consultation with the Treasury Board Secretariat, Environment Canada, and other departments and

agencies as appropriate, will work to clarify authorities, roles, responsibilities, and capacities around greening government operations with a view to clarifying the leadership and responsibility for

- providing central direction and guidance on greening government operations, in the context of sustainable development strategies;
- developing benchmarks and meaningful and aggressive government-wide targets for greening government operations; and
- establishing performance measures and a government-wide strategy for monitoring and reporting.

This will draw on over a decade of experience and be informed by international best practices on greening government operations. Clarification of authorities, roles and responsibilities will be completed by April 2008.

This response has been developed in consultation with the Treasury Board Secretariat and Environment Canada.

The greening of commodity management

10.52 According to Public Works and Government Services Canada (PWGSC), the federal government annually buys about $20 billion in goods and services. In our 2005 audit, *Green Procurement*, we noted that the scale of federal procurement means that the benefits of greening could be significant. That audit made several recommendations, including completing the policy on green procurement, adding progress on green purchasing to the performance evaluations of managers, developing guidance for sustainable development strategies, setting clear accountability for results reporting, and establishing a coordinated approach to training.

Standing offers—Offers from suppliers to provide goods or services under set terms and conditions, including a pre-arranged price. Over the term of an offer, departments can make requests against the offer, up to a specified maximum amount. This makes it easier and faster for departments to do routine purchasing of common goods and services.

10.53 In addition, the 2005 audit made recommendations to PWGSC as the common service provider for federal procurement. We found that the government was not making full use of "green" **standing offers** requiring that suppliers of goods and services use a minimum level of environmental practices. We recommended that PWGSC review standing offers to determine which should be greened and then to ensure that departments give first consideration to green standing offers. We also recognized the potential of the government's shift to more commodity-based management of procurement and recommended that PWGSC include green procurement as a key part of the central management of procurement and include it in the mandate of the interdepartmental commodity councils and management teams set up to manage the acquisition of certain types of goods. PWGSC responded that the commodity councils and

management teams would ensure that environmental criteria are incorporated into relevant mandatory standing offers.

10.54 For this audit, we followed up on commodity management issues related to PWGSC's common service role. Specifically, we examined whether PWGSC, with the support of Environment Canada and Natural Resources Canada, has made progress in greening the commodity management process, including standing offers.

10.55 Given the response to our 2005 audit, we expected that the government would show its promised environmental leadership in keeping with the scale of its annual procurement of close to $20 billion. We expected that it would have

- actively promoted the inclusion and use of environmental considerations in standing offers,
- developed a measurement and reporting framework for green procurement,
- incorporated environmental performance considerations into the commodity management process, and
- ensured that Environment Canada and Natural Resources Canada supported PWGSC's efforts in greening procurement by providing environmental expertise for the commodity management process.

The government is greening commodity management in phases

10.56 In 2005, the government launched its *Commodity Management Framework*, which it calls "a critical guide toward the successful implementation of commodity management across departments." The document states that purchasing has traditionally been managed by each transaction. The use of an individual transaction approach essentially placed the decision on green procurement with a purchasing officer, making buying green just another consideration.

10.57 Commodity management is a framework of governance and processes used to review, plan, acquire, and control the activities of a distinct group of goods and/or services. As part of the process, the government recognizes the need to balance different government priorities such as savings, efficiencies, timeliness of procurement, and long-standing environmental and socio-economic objectives such as support for small and medium enterprises. The government formally implemented the commodity management approach in 2005.

10.58 The commodity management process is being applied to 10 categories of commonly purchased goods and services, such as office supplies and computer hardware and software. In addition, the government announced in Budget 2005 that, as of April 2005, it was mandatory for departments to use standing offers for these 10 commodities, where the offers exist.

10.59 Responding to a commitment it made in its 2004 Throne Speech and to our 2005 audit recommendation, the government's Policy on Green Procurement came into force on 1 April 2006. Its objective is to advance the protection of the environment and support sustainable development by considering environmental performance when making procurement decisions. The Policy calls for PWGSC, in its role as a common service agency, to incorporate environmental performance considerations, including the costs and benefits over the commodity's life cycle, into the commodity management process. Implementing the Policy in phases, PWGSC's initial phase included five of the commodities: computers, printers and copiers, office supplies, fuels, and furniture. In addition, as stated in paragraph 10.48, PWGSC is currently leading the development of a Results-based Management and Accountability Framework to support departmental reporting on the Policy.

10.60 Interdepartmental commodity councils and teams were created to develop overall commodity plans and strategies as required by the Commodity Management Framework. Commodity councils develop the high-level strategies and savings targets while the commodity teams design and deliver the commodity plans for the specific subcategories. The commodity teams are to ensure compliance with relevant procurement policies and practices such as the Policy on Green Procurement.

After more than a year, formal, integrated commodity management plans are not yet in place

10.61 To assess the impact of the new procurement approach, we examined how PWGSC has greened the commodity management process for two of the five commodities: furniture and computer hardware.

10.62 **Furniture.** While the furniture commodity council has met only once, the furniture commodity team, which includes representatives from Environment Canada and Natural Resources Canada, has met several times in the past year. While green criteria and sustainable development formed part of the agenda, the focus in early 2006 was on

streamlining and speeding up the process to achieve greater savings. The furniture commodity team has not yet produced a formal, integrated commodity plan.

10.63 The furniture commodity team's efforts were affected by the furniture industry's concerns with the government's procurement reform. The consultations with the furniture industry in late 2006 focused on the procurement process and the government's savings targets. Environmental considerations were not a priority in that exercise. In early 2007, PWGSC set up a new interdepartmental committee, as well as an external committee with industry, to help move the furniture commodity process forward.

10.64 The commodity team analysis shows annual government spending on furniture was approximately $135 million. At present, the current furniture standing offers contain non-mandatory green requirements. Environmental attributes were requested from companies for information purposes only, and were not a condition for obtaining a standing offer. The commodity team is currently preparing a new standing offer for cabinets that will require suppliers to comply with a minimum level of mandatory green criteria. PWGSC's intent is to include mandatory environmental criteria in future standing offers that reflect current industry capability and standards.

10.65 Computers. Public Works and Government Services Canada estimates that the federal government's annual purchases of computer hardware total about $500 million. Officials indicated that a significant barrier to planning was the lack of quality data on the dollar value of departmental purchasing for this commodity. In addition, the Department estimates that more than half of government computer hardware business does not go through the standing offer mechanism. The computer hardware commodity team, which includes representatives from Environment Canada and Natural Resources Canada, has not yet produced its formal, integrated commodity plan. To green its activities, in 2006–07 the team held a variety of meetings with industry and individual departments. Examples of green activities for computers include energy efficient screens and power supplies, as well as environmentally friendly disposal. A working group on the disposal of electronic products was developing a green lifecycle management approach for computers, given that computers contain toxic materials that need to be properly managed at the end of their useful lives. The commodity team expressed its desire to green computer procurement but explained that it must balance that goal with the need to maintain enough competition among suppliers.

10.66 We compared the environmental requirements in the existing standing offer for desktop computers, covering the period 2004 to 2007, with the environmental requirements in the request for standing offer that was issued in July 2007. We noted an increase in the level of environmental requirements in the new procurement document. For example, it calls for all computer system units and monitors to be certified through the Electronic Product Environment Assessment Tool (EPEAT) Silver level, which reflects current industry practice.

10.67 PWGSC's greening of the computer hardware and furniture commodities is going ahead without the overall integrated commodity plans required by the Commodity Management Framework, and as only one among a number of competing priorities.

10.68 While acknowledging that comprehensive commodity management plans have not yet been developed, the Department informed us that, as part of a number of its activities, it has produced documents that contain elements of the information that are required for an integrated commodity plan. For example, as part of a department-wide exercise to accelerate savings in PWGSC's commodity management practices, commodity strategy documents were prepared in early 2006. These documents summarized market demographics and data, procurement options, and suggestions for speeding up the achievement of savings targets. However, there was little attention given to environmental performance. The commodity teams have separately produced documents that summarize the Department's greening activities for commodity standing offers, such as those activities described above for furniture and computer hardware.

10.69 Recommendation. Public Works and Government Services Canada (PWGSC) should develop the integrated comprehensive commodity management plans required by the Commodity Management Framework to ensure that it maximizes its greening efforts while respecting other government priorities for procurement.

PWGSC's response. PWGSC agrees with this recommendation and will review and develop comprehensive commodity management plans for Commodity Management Initiatives identified prior to December 2007, including the two commodities examined, namely furniture and computer hardware, by December 2008.

Progress is satisfactory

10.70 Given that the government moved to its current commodity management approach in 2005, and that it has increased the inclusion of environmental considerations into standing offers for the commodities we examined, we have assessed the government's progress in greening the commodity management process as satisfactory, with the exception of slow progress in developing integrated comprehensive commodity plans (Exhibit 10.3).

Exhibit 10.3 Progress in addressing our recommendations on greening the commodity management process is satisfactory

Recommendations	Progress
Public Works and Government Services Canada, with the support of Environment Canada and Natural Resources Canada, should green the commodity management process, including standing offers. (2005 Report of the Commissioner of the Environment and Sustainable Development, Chapter 6, see paragraphs 6.40 and 6.48.)	Satisfactory

Satisfactory—Progress is satisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendations were made.

Unsatisfactory—Progress is unsatisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendations were made.

Conclusion

10.71 The government has produced greening government guidance to departments preparing sustainable development strategies, but the guidance lacks a results focus. With less than aggressive targets in three areas of operations and without departmental commitments to meeting or exceeding these targets, the federal government has not shown the promised leadership in the area of greening its operations. It does not have an agreed-upon method to consolidate and report on government-wide results on its progress in greening its own operations. In our opinion, this represents unsatisfactory progress.

10.72 Greening government procurement has been a government priority since the *Code of Environmental Stewardship* was introduced in 1992. The government's 2006 Policy on Green Procurement is a positive step. The government has also placed considerable emphasis on its new commodity management approach to procurement, which was introduced in late 2005. As a result, given the time that has elapsed since that change in approach, the government is making satisfactory progress in greening the commodities we examined, with

the exception of slow progress in developing integrated comprehensive commodity management plans as required by the Commodity Management Framework. Efforts need to be made to consolidate the required information into comprehensive plans because, without strategic planning toward best practice goals based on integrated analysis, Public Works and Government Services Canada cannot show leadership in this area or clearly demonstrate whether the government is maximizing its greening efforts among competing priorities.

10.73 After more than 15 years since its first efforts, the government is taking some commendable initial steps to green its operations but it continues to have a long way to go.

About the Audit

Objective

The overall objective was to assess the progress made by selected departments in responding to the underlying issues derived from certain recommendations, observations, and commitments made in prior years with respect to certain aspects of greening government operations.

Scope and approach

We focused our audit on the underlying issues derived from selected recommendations and significant observations drawn primarily from the 2005 Report of the Commissioner of the Environment and Sustainable Development (CESD), Chapter 6, Green Procurement, while taking into account related points raised over the past 10 years, such as the 2005 CESD Report, Chapter 7, Sustainable Development Strategies. Specifically our audit assessed:

- Whether Public Works and Government Services Canada (PWGSC), Environment Canada, and the Treasury Board Secretariat have made satisfactory progress in providing central direction and guidance on greening government operations to departments for the 2007 sustainable development strategies, as derived from recommendation 6.24 of Chapter 6 of our 2005 report. In response to that recommendation, the government stated it was working to develop "a core set of practical and progressive green procurement objectives" for departments by December 2005.
- Whether departments and agencies have responded to government-wide greening government targets.
- Whether Public Works and Government Services Canada, with the support of Environment Canada and Natural Resources Canada, has made satisfactory progress in greening the commodity management process, including standing offers, derived from recommendations 6.40 and 6.48 in Chapter 6 of our 2005 Report. In response to those recommendations, the government stated that it would release a green procurement policy that would require commodity councils and management teams to incorporate environmental criteria into relevant mandatory standing offers. Budget 2005 stated that this would apply to the 10 most common commodities and services purchased by government.

Our approach included reviewing documents and interviewing departmental officials. We also looked for best practices among selected other developed countries.

Criteria

The following criteria for the audit were derived from the observations and recommendations (including the government response) from our 2005 audits, and from the 2006 Policy on Green Procurement. We expected to find the following:

- The government has designated a lead department to coordinate the development of central direction and guidance and has established governance structures with well-defined roles, responsibilities, and accountabilities.

- The government has identified priority areas and has developed meaningful and significant government-wide targets, taking into account experience, results, and lessons learned from previous guidance to departments.
- The government has established a framework for measurement and reporting of greening government operations government-wide.
- Departments have incorporated government-wide greening government targets in their sustainable development strategies.
- Departments have developed frameworks, processes, and practices for the measurement and reporting against the targets.
- The lead department has monitored the efforts of the implementing departments to ensure consistency across government.
- The government has actively promoted the inclusion and use of environmental considerations in standing offers.
- PWGSC has worked with departments to develop government-wide green procurement targets and to set departmental targets for their sustainable development strategies that are significant and meaningful based on the nature of their mandates.
- PWGSC has worked with departments to develop a measurement and reporting framework for green procurement.
- The government has incorporated environmental performance considerations into the commodity management process.
- The government has ensured that Environment Canada and Natural Resources Canada support Public Works and Government Services Canada's efforts toward greening procurement by providing environmental expertise as part of the commodity management process.

Audit work completed

Audit work for this chapter was substantially completed on 15 June 2007.

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Appendix List of recommendations

The following is a list of recommendations found in Chapter 10. The number in front of the recommendation indicates the paragraph number where it appears in the chapter. The numbers in parentheses indicate the paragraph numbers where the topic is discussed.

Recommendation	Response
Central direction and guidance for sustainable development strategies	
10.51 Public Works and Government Services Canada (PWGSC), in consultation with the Treasury Board Secretariat, Environment Canada, and other departments and agencies as appropriate, should revisit the authorities, roles, responsibilities, and capacities for greening government operations, with a view to clarifying the leadership and responsibility for • the provision of central direction and guidance on greening government operations for sustainable development strategies, • the establishment of meaningful and aggressive government-wide targets for greening government operations, and • the development of a government-wide strategy for monitoring and reporting on greening government operations. **(10.11–10.50)**	PWGSC, on behalf of responsible departments and agencies, agrees with this recommendation. Building on past successes, PWGSC, in consultation with the Treasury Board Secretariat, Environment Canada, and other departments and agencies as appropriate, will work to clarify authorities, roles, responsibilities, and capacities around greening government operations with a view to clarifying the leadership and responsibility for • providing central direction and guidance on greening government operations, in the context of sustainable development strategies; • developing benchmarks and meaningful and aggressive government-wide targets for greening government operations; and • establishing performance measures and a government-wide strategy for monitoring and reporting. This will draw on over a decade of experience and be informed by international best practices on greening government operations. Clarification of authorities, roles and responsibilities will be completed by April 2008. This response has been developed in consultation with the Treasury Board Secretariat and Environment Canada.

Recommendation	Response
The greening of commodity management	
10.69 Public Works and Government Services Canada (PWGSC) should develop the integrated comprehensive commodity management plans required by the Commodity Management Framework to ensure that it maximizes its greening efforts while respecting other government priorities for procurement. **(10.52–10.68)**	PWGSC agrees with this recommendation and will review and develop comprehensive commodity management plans for Commodity Management Initiatives identified prior to December 2007, including the two commodities examined, namely furniture and computer hardware, by December 2008.

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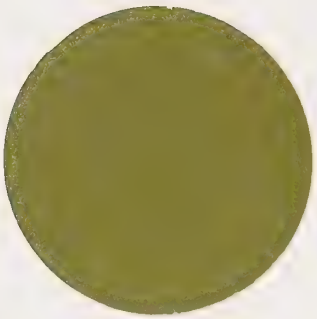
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The March 2008 Status Report of the Commissioner of the Environment and Sustainable Development comprises The Commissioner's Perspective—2008, Main Points—Chapters 1 to 14, Appendices, and 14 chapters. The main table of contents for the Report is found at the end of this publication.

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Previous Audits of Responses to Environmental Petitions

Preface

Environmental petitions reflect the environmental concerns of Canadians. The petitions process is a simple way for citizens and organizations to express their concerns about environmental problems and to ask ministers to investigate the problems, explain federal policy, or examine the enforcement of environmental legislation, among other things.

Created by an amendment to the *Auditor General Act* in 1995, the petitions process allows any Canadian resident to submit an environmental petition to the Auditor General of Canada for forwarding to the responsible federal minister or ministers. The petitioner may act alone or on behalf of an organization, business, or municipality. A petition must be in written form and address an environmental matter in the context of sustainable development. In addition, the issue must be the responsibility of a federal department or agency subject to the petitions process. Issues raised in petitions vary widely: Examples have included species at risk, human health, environmental contamination, and climate change. Federal ministers must respond in writing within 120 days of receipt. As of 4 January 2008, Canadians had submitted about 280 petitions and received about 560 responses from federal ministers. Petitions and responses are available in the online petitions catalogue on the website of the Office of the Auditor General of Canada.

The Commissioner of the Environment and Sustainable Development manages the petitions process on behalf of the Auditor General and reports on the petitions process annually to Parliament. In October 2007, in conjunction with our monitoring and reporting responsibilities, we also reported on a retrospective study conducted by our Office on the petitions process. The surveys undertaken indicated that both petitioners and department officials who responded believed that petitions have had an impact, or somewhat of an impact, on the federal management of specific environmental matters.

In 2003, with a view to promoting accountability and transparency in government, we began to audit specific commitments made by ministers in their responses. Audits of commitments allow us to

determine if ministers and departments are doing what they said they would do in response to petitioners. In each petition response audit, we select key statements and commitments made to petitioners and audit them to determine the extent to which departments have fulfilled their commitments. To date, our Office has undertaken 11 petition response audits, which have been reported in our annual petitions chapters.

Chapters 11 through 14 report on four follow-up audits. These are the first status reports we have conducted on audits of petition responses. They will allow us to determine whether ministers have met the commitments they made in response to our prior audit recommendations, as well as the commitments made in the original petition responses. Chapters 11 through 14 look respectively at the progress made by Natural Resources Canada in updating the *Nuclear Liability Act*, by Environment Canada in establishing guidelines for listing species at risk, by National Defence in managing military dumpsites, and by Fisheries and Oceans Canada in developing a policy and regulatory framework for managing genetically engineered fish.

Chapter

11

Insurance for Nuclear Operators

All of the audit work in this chapter was conducted in accordance with the standards for assurance engagements set by The Canadian Institute of Chartered Accountants. While the Office adopts these standards as the minimum requirement for our audits, we also draw upon the standards and practices of other disciplines.

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Previous Audits of Responses to Environmental Petitions

Insurance for Nuclear Operators

Main Points

What we examined

We sought to determine whether Natural Resources Canada had made satisfactory progress in addressing a recommendation from our 2005 audit of the response to a petition submitted in 2003 on the issue of insurance for nuclear operators. In that response, the Minister agreed to bring forward revisions to the *Nuclear Liability Act* that would update insurance requirements. In 2005, we recommended that Natural Resources Canada begin preparatory work on revisions to the *Nuclear Liability Act* and submit policy proposals to the Minister by late 2005. The Department agreed to implement the recommendation.

Why it's important

The *Nuclear Liability Act* came into force in 1976. It requires that funds be available to compensate people who may have suffered injury or damage as a result of a nuclear incident at an installation, such as a nuclear power generating plant. The *Nuclear Liability Act* holds that the nuclear operator is exclusively liable for any damage arising from radioactive releases. However, the Act limits an operator's liability to a maximum of $75 million. Our 2005 audit of the petition response on this issue found that this amount remained at a level established over 30 years ago and was considerably lower than the coverage in 12 other major industrialized nations.

What we found

Progress is satisfactory. This follow-up audit found that Natural Resources Canada has drafted legislation that was introduced in Parliament in October 2007 as Bill C-5. Among other things, the proposed legislation updates the mandatory insurance requirements for nuclear operators.

Introduction

11.1 The *Nuclear Liability Act* came into force in 1976. It requires that funds are available to compensate people who may have suffered injury or damage as a result of a nuclear incident at a nuclear installation, such as a nuclear power generating plant. Natural Resources Canada is responsible for federal policy concerning liability in the case of nuclear incidents and for the Act itself.

11.2 The *Nuclear Liability Act* holds that the nuclear operator is exclusively liable for any damage arising from radioactive releases. No other person who may have contributed to the incident can be held liable. However, the Act limits an operator's liability to a maximum of $75 million. If the amount of damage from an accident exceeded $75 million, it is understood that the federal government and ultimately taxpayers would be responsible for the balance.

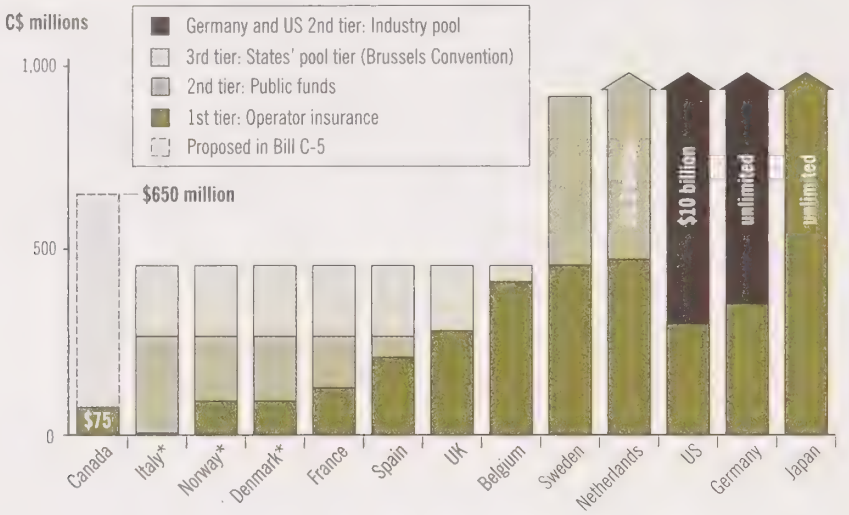
Natural Resources Canada committed to introducing revisions to the *Nuclear Liability Act*

11.3 In 2002 and 2003, the Office received environmental petitions 60A and 60B from the same individual. One of the petitioner's concerns was that the amount of insurance coverage required under the *Nuclear Liability Act* was insufficient. In March 2003, the Minister of Natural Resources responded, "It is time to bring forward revisions to the *Nuclear Liability Act* to update it and bring it up to international standards."

What we found in 2005

11.4 In Chapter 8 of the 2005 Report of the Commissioner of the Environment and Sustainable Development (CESD) to Parliament, we assessed the progress made toward revising the Act. We found that insurance requirements for nuclear operators in Canada have not changed or been adjusted for inflation since the Act came into force more than 30 years ago. We also found that nuclear liability limits are lower in Canada than in 12 other major industrialized nations with nuclear facilities (Exhibit 11.1). Natural Resources Canada had recognized the need to revise the Act, but officials in the Department could not provide a timeline for revision. We recommended that Natural Resources Canada begin preparatory work on revisions to the *Nuclear Liability Act* and submit policy proposals to the Minister by late 2005 to fulfill the commitment to bring forward revisions to the Act. The Department agreed with the recommendation and committed to implementing it.

Exhibit 11.1 **Canada's nuclear liability limit is lower than 12 other nations with nuclear facilities**



*These countries operate research reactors only.

Source: Adapted from Natural Resources Canada

Focus of the audit

11.5 We sought to determine whether Natural Resources Canada had made satisfactory progress in addressing our recommendation from Chapter 8 of the 2005 Commissioner's Report.

11.6 More details on the audit objectives, scope, approach, and criteria are in **About the Audit** at the end of this chapter.

Observations

11.7 We expected that Natural Resources Canada would follow through on its commitment to introduce policy proposals to amend the *Nuclear Liability Act* by late 2005.

Requests and intentions to revise the Act are long-standing

11.8 In the 1985 Report of the Auditor General of Canada, we noted that the insurance agreement covering civil liability for nuclear damage within the *Nuclear Liability Act* was deficient and that a review by Parliament of the *Nuclear Liability Act* would be appropriate. In 2001, the Senate Committee on Energy, the Environment and Natural Resources recommended that the government take immediate action to amend the *Nuclear Liability Act* and increase and maintain insurance coverage at a minimum of $600 million to be in line with international conventions.

11.9 Natural Resources Canada officials first developed draft policy proposals in 1996 for comprehensive amendments to the Act. The policy proposals designed to revise the insurance requirements for nuclear operators have been in draft form since 1999. The first set of comprehensive policy proposals to revise the Act was submitted to the Minister in 2001.

11.10 Department officials advised us that major nuclear operators consulted generally support the proposed amendments to the Act. They said the operators recognize that these amendments are necessary for continued nuclear development and that the current Act is out of step internationally. Department officials also said the operators recognize that higher insurance requirements would reduce the exposure to litigation that they face in light of the current insurance limit of $75 million.

Nuclear power is expanding in Canada and worldwide

In Canada, Ontario and New Brunswick have recently approved plans to refurbish existing nuclear facilities; in 2008, Quebec plans to decide whether to refurbish its reactor. Nuclear power is also expanding worldwide. Globally there are over 435 nuclear reactors in operation. As of August 2007, over 300 additional nuclear reactors were in the proposal, planning, or building phases.

11.11 Given this long history of requests and commitments, the growth of nuclear power in Canada and worldwide, and the agreement of government officials and stakeholders consulted, we expected that Natural Resources Canada would follow through on its commitment to develop policy proposals to amend the *Nuclear Liability Act*.

The Department has drafted new legislation

11.12 Progress is satisfactory. In November 2006, Natural Resources Canada officials submitted policy proposals to the Minister to amend the *Nuclear Liability Act*. On 26 October 2007, the Minister of Natural Resources introduced Bill C-5, *An Act respecting civil liability and compensation for damage in case of a nuclear incident,* in the House of Commons. This bill includes provisions to revise the amount of insurance required for nuclear operators and bring the requirements for nuclear operators more in line with international standards. The proposed legislation requires nuclear operators to have $650 million in insurance coverage instead of the $75 million currently required under the existing Act. The revisions also require the responsible minister to review the amount of liability coverage at regular intervals of no more than five years.



Gentilly-2 nuclear generating station.

Source: Hydro-Québec

11.13 Although the bill was still before the House of Commons when we completed our audit, we can conclude that the Minister of Natural Resources has made satisfactory progress on the commitment made to the petitioner in 2003 and, further, that the Department has achieved satisfactory progress in addressing the recommendation from our 2005 audit (Exhibit 11.2).

Exhibit 11.2 **Progress in addressing our recommendation on policy proposals to amend insurance requirements under the *Nuclear Liability Act* is satisfactory**

Recommendation	Progress
Natural Resources Canada should begin preparatory work on revisions to the *Nuclear Liability Act* and submit policy proposals to the Minister by the end of 2005, in order to advance the commitment to bring forward revisions to the Act. (2005 Report of the Commissioner of the Environment and Sustainable Development, Chapter 8, paragraph 8.29)	Satisfactory

Satisfactory—Progress is satisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation was made.

Unsatisfactory—Progress is unsatisfactory, given the significance and complexity of the issue and the time that has elapsed since the recommendation was made.

11.14 This is an example of a petition that had an impact on the federal management of an environmental matter. Although we cannot directly attribute the government's action on an issue to the submission of a related petition, in this case both the petitioner and the department officials agree that revisions to the *Nuclear Liability Act* resulted, in part, from issues raised in this petition.

Conclusion

11.15 Natural Resources Canada has made satisfactory progress in developing policy proposals for amending the *Nuclear Liability Act* to bring mandatory insurance requirements for nuclear operators more in line with international standards. In 2006, department officials submitted policy proposals to the Minister of Natural Resources that were designed to advance the commitment to bring forward revisions to the Act. The Minister then introduced Bill C-5, *An Act respecting civil liability and compensation for damage in case of a nuclear incident,* in the House of Commons on 26 October 2007. The purpose of subsections 21(1) and 23(1) of this bill is to revise the amount of insurance required for nuclear operators from $75 million to $650 million. Natural Resources Canada has acted on its 2003 commitment to the petitioner in this regard and has made satisfactory progress in addressing our 2005 recommendation.

About the Audit

Objective

Our objective was to determine whether Natural Resources Canada had achieved satisfactory progress in addressing commitments made in response to a recommendation in our 2005 audit of insurance for nuclear operators.

Scope and approach

Since 2003, the Commissioner of the Environment and Sustainable Development (CESD) has conducted 11 petition response audits on a wide variety of subjects. To identify which of the 11 were suitable for follow-up audit, we examined the information available in our recommendations database, consulted staff involved in the original audits, and conducted research. To rank the audits for potential follow-up audit work, we developed criteria based on internal guidance for performance audits.

We also considered criteria pertaining to auditability, sensitivity, risk, and availability of resources. On the basis of assessments against these criteria, an advisory committee considered the top-ranked issues and selected four. The results for each of these audits are individually reported in four chapters—11 (this chapter), 12, 13, and 14.

In this audit, we evaluated the progress made by Natural Resources Canada on the recommendation in our 2005 CESD Report, Chapter 8, paragraph 8.29. In order to do so, we reviewed documentation and interviewed department officials and external stakeholders.

Criteria

The criteria for the audit were derived from the findings and recommendations of our 2005 audit on insurance for nuclear operators, and in particular, Natural Resources Canada's response to the above-noted recommendation in that audit (Chapter 8, paragraph 8.29). We expected that

- Natural Resources Canada would have developed policy proposals for revisions to the operator liability limit under the *Nuclear Liability Act*; and
- the Department would have prepared recommendations and provided them to the Minister for consideration, by the end of 2005.

Audit work completed

Audit work for this chapter was substantially completed on 29 October 2007.

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Chapter

12

Listing of Species at Risk

All of the audit work in this chapter was conducted in accordance with the standards for assurance engagements set by The Canadian Institute of Chartered Accountants. While the Office adopts these standards as the minimum requirement for our audits, we also draw upon the standards and practices of other disciplines.

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Listing of Species at Risk

Main Points

What we examined

We sought to determine whether Environment Canada had made satisfactory progress in addressing a significant observation made in our 2005 audit of the response to a petition submitted in 2002 on developing guidelines for listing species at risk. In the response, the Minister of the Environment agreed to develop such guidelines. Our 2005 audit noted that the Department planned to have these guidelines in place by 2006.

Why it's important

The *Species at Risk Act* is one of the legal cornerstones for the protection of wildlife in Canada, helping to conserve and protect species and ultimately biodiversity. Under the Act, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) assesses the status of species and advises on whether the species should be added to the List of Wildlife Species at Risk. A species not listed does not benefit from the provisions of the Act. Currently, there are no public guidelines available for the government and the Minister to use when deciding not to list a species that the Committee has assessed as being at risk. Final guidelines would help confirm that the government's decision-making process on the protection of species at risk is consistent, systematic, and transparent.

What we found

Progress is unsatisfactory. Environment Canada has not yet finalized its guidelines for dealing with cases in which the Minister recommends not adding to the List of Wildlife Species at Risk a species assessed by COSEWIC as being at risk. Although the Department has drafted guidelines, they are not publicly available, have changed over time, and are not applied consistently or systematically. In the meantime, 20 species that COSEWIC has assessed as at risk have not been listed due to socio-economic reasons and a requirement for additional consultation with the Nunavut Wildlife Management Board.

Environment Canada has responded. Environment Canada agrees with our recommendation. The Department's detailed response follows the recommendation in the chapter.

Introduction

12.1 Parliament passed the *Species at Risk Act* in December 2002, and most of the Act's provisions came into force in June 2003. The Act is one of the legal cornerstones for the protection of wildlife in Canada, helping to conserve and protect species and ultimately biodiversity. The Act provides for the protection and recovery of species considered at risk and found on federal lands or under federal jurisdiction, and also for the protection of critical habitat. The *Species at Risk Act* is designed to complement related provincial and territorial legislation.

Federal lands—Lands that belong to Her Majesty in right of Canada, or that Her Majesty in right of Canada has the power to dispose of, and all waters on and airspace above those lands. Federal lands also include the internal waters of Canada and the territorial sea of Canada, as well as reserves and any other lands that are set apart for the use and benefit of a band under the *Indian Act*, and all waters on and airspace above those reserves and lands.

12.2 Before a species can be added to the List of Wildlife Species at Risk under the Act, it must first be assessed as at risk by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). Based on this scientific assessment, and with input where applicable from the ministers responsible for Fisheries and Oceans Canada and Parks Canada, the Minister of the Environment considers a variety of factors and recommends to the Governor in Council to list or not to list the species or to refer it back to COSEWIC for further assessment (Exhibit 12.1). As of June 2007, there were 389 species on the List of Wildlife Species at Risk.

Committee on the Status of Endangered Wildlife in Canada (COSEWIC)—The Committee assesses the status of wildlife species in Canada that may be at risk. It currently consists of 30 members from the provinces and territories, federal agencies, Aboriginal groups, and other organizations.

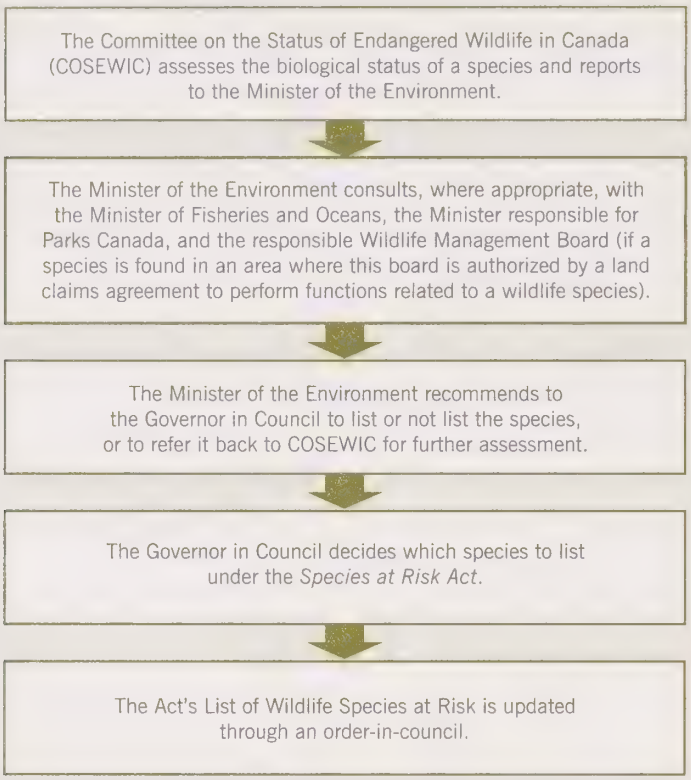
Governor in Council (in the context of the *Species at Risk Act*)—Refers to the Governor General acting with the advice and consent of Privy Council, who may, on the recommendation of the Minister of the Environment, amend the List of Wildlife Species at Risk by adding, reclassifying, or removing a species.

12.3 Whether a species is listed or not can have significant implications. When a species is listed as endangered or threatened under the *Species at Risk Act*, killing or harming the species, or harming its residence, is prohibited for a species found on federal lands and/or under federal jurisdiction. Planning for recovery of the species must also be done. A species that is not listed does not benefit from the provisions of the Act, although it may benefit from other federal, provincial, or territorial conservation efforts. Guidelines for making listing decisions are important because they ensure a transparent and consistent approach to determining whether or not to list species.

Environment Canada committed to finalizing the guidelines for listing species at risk

12.4 In November 2002, petition 61 was submitted requesting information about the criteria used to determine whether or not to list species on the List of Wildlife Species at Risk. The Minister of the Environment responded that the federal government was developing guidelines for dealing with cases in which the Minister decided not to follow COSEWIC advice to list a species as being at risk under the Act. However, the Minister did not provide a time frame for finalizing the new guidelines.

Exhibit 12.1 **Process to list a species at risk**



What we found in 2005

12.5 In the Commissioner's 2005 Report, Chapter 8, we reported that Environment Canada expected to have the guidelines in place in 2006 to assist the government and the Minister when considering science-based advice from COSEWIC. While we made no specific recommendation at the time, we stated in conclusion that "until these guidelines are in place, Environment Canada cannot ensure that decisions being made to list or not to list a species at risk are transparent or consistent."

Other chapters in this report also contain information on the *Species at Risk Act*:

- Chapter 4: Federal Protected Areas for Wildlife
- Chapter 5: Protection of Species at Risk

Focus of the audit

12.6 We sought to determine whether Environment Canada had made satisfactory progress in developing guidelines to assist with recommendations to list or not to list species at risk and in addressing the above-noted key observation from our 2005 audit.

12.7 More details on the audit objective, scope, approach, and criteria are in **About the Audit** at the end of this chapter.

Observations and Recommendation

Guidelines for listing species at risk are still not in place

12.8 No timelines exist for finalizing the guidelines. Given the importance of decisions on listing species at risk, we expected that Environment Canada had finalized the guidelines by the end of 2006 and used them in recommending whether or not to list species. In 2005, Environment Canada provided us with a set of draft guidelines consisting of criteria that the Minister considered when recommending not to list a species assessed as at risk by COSEWIC. However, during this follow-up audit, we noted that these draft guidelines had changed over time and still not been finalized. Environment Canada indicated that it expected the guidelines to be approved by December 2007, following approval of the new National Framework for Species at Risk Conservation. More recent information from the Department indicates that it expects the key policies of the Act to be in place in the winter of 2008 and the guidelines to be completed shortly thereafter. However, there are still no definitive timelines for finalizing these guidelines.

12.9 Environment Canada considers some criteria from the draft guidelines in its consultation and ministerial recommendations on listing, but it could not demonstrate that it uses the draft guidelines consistently or systematically. The Department told us that it considers some criteria on a case-by-case basis but acknowledged that it could be more systematic and consistent in its approach.

12.10 The results of the listing decisions are published in the *Canada Gazette* along with the related regulatory impact analysis statements. We noted that more recent decisions reported in the *Canada Gazette* provide more details on the reasons for not listing species. However, these reports do not specify which criteria were considered in making a decision. For example, the *Canada Gazette* may indicate that a species was not listed for socio-economic reasons, but it does not discuss other criteria the Minister considered in developing a recommendation. Furthermore, the Department has not published or made available the current draft guidelines containing the criteria used in the decision-making process. Without final public guidelines, Environment Canada cannot demonstrate that recommendations being made to list or not to list a species at risk are consistent, systematic, and transparent (Exhibit 12.2).

Exhibit 12.2 Progress in addressing our finding on guidelines for listing species at risk is unsatisfactory

Finding	Progress
Environment Canada committed to having final guidelines in place by 2006 for dealing with cases in which the Minister does not follow COSEWIC advice to add a species to the List of Wildlife Species at Risk. Until theses guidelines are in place, Environment Canada cannot ensure that decisions on listing or not listing a species at risk are transparent and consistent. (2005 Report of the Commissioner of the Environment and Sustainable Development, Chapter 8, see paragraph 8.40)	Unsatisfactory

Satisfactory—Progress is satisfactory, given the significance and complexity of the issue, and the time that has elapsed since the finding was made.

Unsatisfactory—Progress is unsatisfactory, given the significance and complexity of the issue, and the time that has elapsed since the finding was made.

12.11 **Recommendation.** Environment Canada should ensure that the guidelines to make recommendations for listing species at risk are finalized, made publicly available, and implemented.

Environment Canada's response. The Department accepts the recommendation. Guidelines for listing/delisting wildlife species under the *Species at Risk Act* (SARA) were approved in principle in September 2006 by the Deputy Heads Steering Committee for Species at Risk (Environment Canada, Fisheries and Oceans Canada, and Parks Canada), and together with federal regulatory policy have guided subsequent decisions.

Due to evolving legislative and policy frameworks in provinces and territories, and the implications of this for SARA, a National Framework for Species at Risk Conservation was developed and endorsed by the Canadian Council of Resource Deputy Ministers in September 2007. As a result, the guidelines for listing/delisting wildlife species under SARA are being reviewed for consistency. Once this federal review is complete, the guidelines will be made public.

Twenty species assessed as at risk have not been listed

12.12 In the absence of final guidelines for decision making, we found that 20 species assessed as at risk by COSEWIC had not been recommended for listing by the Minister of the Environment (Exhibit 12.3). There were two main reasons given: socio-economic considerations (10 cases) and the need for further consultation with the Nunavut Wildlife Management Board (10 cases).

Exhibit 12.3 **Species assessed as at risk by COSEWIC but not recommended for listing by the Minister of the Environment**

Species name	Governor in Council Decision date	Rationale for not listing
Terrestrial species		
1. Grizzly Bear, Northwestern population	January 2005	Consultation with the Nunavut Wildlife Management Board (NWMB) required
2. Wolverine, Western population	January 2005	NWMB consultation required
3. Peary Caribou	July 2005	NWMB consultation required
4. Plains Bison	July 2005	Socio-economic considerations
5. Porsild's Bryum	July 2005	NWMB consultation required
6. Barren-ground Caribou, Dolphin and Union population	July 2005	NWMB consultation required
Aquatic species		
7. Pacific Sockeye Salmon, Cultus population	January 2005	Socio-economic considerations
8. Pacific Sockeye Salmon, Sakinaw population	January 2005	Socio-economic considerations
9. Coho Salmon, Interior Fraser population	April 2006	Socio-economic considerations
10. Atlantic Cod, Laurentian North population	April 2006	Socio-economic considerations
11. Atlantic Cod, Maritimes population	April 2006	Socio-economic considerations
12. Atlantic Cod, Newfoundland and Labrador population	April 2006	Socio-economic considerations
13. Beluga Whale, Cumberland Sound population	August 2006	NWMB consultation required
14. Beluga Whale, Eastern High Arctic and Baffin Bay populations	August 2006	NWMB consultation required
15. Beluga Whale, Eastern Hudson Bay population	August 2006	NWMB consultation required
16. Beluga Whale, Ungava Bay population	August 2006	NWMB consultation required
17. Beluga Whale, Western Hudson Bay population	August 2006	NWMB consultation required
18. Porbeagle Shark	August 2006	Socio-economic considerations
19. White Sturgeon, Lower Fraser River population	August 2006	Socio-economic considerations
20. White Sturgeon, Middle Fraser River population	August 2006	Socio-economic considerations

Source: *Canada Gazette* and Environment Canada data



The grizzly bear is not listed as a species at risk

In 2004, COSEWIC estimated that there were about 26,000 grizzly bears in Canada—about 14,000 in British Columbia (the largest population), 6,000–7,000 in the Yukon, 5,100 in the Northwest Territories, 800–2,000 in Nunavut, and 1,000 in Alberta. The grizzly bear has not been listed for protection in Canada under the *Species at Risk Act* pending consultation with the Nunavut Wildlife Management Board

12.13 Although socio-economic considerations were cited in the decisions not to list 10 species, we found that Environment Canada could not demonstrate how it used socio-economic information in developing a recommendation to list or not to list a species. Officials told us that they are working to align approaches with Fisheries and Oceans Canada and Parks Canada to develop a common set of guidelines to assess socio-economic considerations in a consistent manner.

12.14 COSEWIC assessed a number of species within the area managed by the Nunavut Wildlife Management Board and advised that 10 of them be added to the list of species at risk. The Minister of the Environment recommended that none of these be listed, citing the need for further consultation with the Nunavut Wildlife Management Board. The Board expressed concern about insufficient consultation with Nunavut communities when the federal government was deciding whether to list the 10 species. Environment Canada officials told us that the listing of each species will be reconsidered when consultations are concluded.

12.15 Environment Canada, Fisheries and Oceans Canada, and Parks Canada have begun working with the Board to harmonize the designation and protection of rare and endangered species under the Nunavut Land Claims Agreement and the *Species at Risk Act*. Although they have made recent progress, at the end of our audit the harmonization agreement was still under development. Until this harmonization agreement is in place, there is no definitive timeline for concluding these consultations, and species assessed by COSEWIC as being at risk remain without federal protection.

12.16 Environment Canada's monitoring of species not listed is limited. COSEWIC reviews the status of species it assesses, whether they are listed or not, every 10 years, or less if warranted. In the interim, Environment Canada relies on other agencies as well as provincial and territorial governments to monitor the status of species. Department officials stated that monitoring of species not listed varies by species and jurisdiction, depending on the issues involved and the resources available. We noted that Environment Canada has done limited monitoring of some species not recommended for listing, such as the barren ground caribou. It is important that the Department know the status of a species not recommended for listing in order to understand the consequences of decisions not to list species for federal protection.

Conclusion

12.17 Environment Canada's progress on its commitment to finalize guidelines for listing species at risk by 2006 is unsatisfactory. The Department has not yet finalized its guidelines for dealing with cases in which the Minister recommends not adding to the List of Wildlife Species at Risk a species assessed by COSEWIC as being at risk. Although it has drafted guidelines, these are not publicly available, have changed over time, and are not applied consistently or systematically. In the meantime, 20 species assessed as being at risk have not been listed for federal protection.

About the Audit

Objective

The objective of our audit was to determine whether Environment Canada had made satisfactory progress in addressing a significant observation noted in our 2005 audit of guidelines for listing species at risk.

Scope and approach

Since 2003, the Commissioner of the Environment and Sustainable Development has conducted 11 petition response audits on a wide variety of subjects. To identify which of the 11 were suitable for follow-up audit, we examined the information available in our recommendations database, consulted with staff involved in the original audits, and conducted research. To rank the audits for potential follow-up audit work, we developed criteria based on internal guidance on performance auditing.

We also considered criteria pertaining to auditability, sensitivity, risk, and availability of resources. On the basis of assessments against these criteria, an advisory committee considered the top-ranked issues and selected four. The results for each of these audits are reported in four chapters—11, 12 (this chapter), 13, and 14.

In this audit, we evaluated the progress made by Environment Canada on its commitment to address our observation in the 2005 Report, Chapter 8, paragraph 8.40. To do so, we reviewed documentation and files and interviewed departmental officials and external experts.

Criteria

The criteria for the audit were derived from the findings from our 2005 audit of guidelines for listing species at risk.

We expected that the Department would have finalized guidelines by 2006 for dealing with cases in which the Minister of the Environment decided not to follow COSEWIC advice to add a species to the List of Wildlife Species at Risk.

Audit work completed

Audit work for this chapter was substantially completed on 29 October 2007.

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Appendix List of recommendations

The following recommendation is found in Chapter 12. The number in front of the recommendation indicates the paragraph number where it appears in the chapter. The numbers in parentheses indicate the paragraph numbers where the topic is discussed.

Recommendation	Response
Guidelines for listing species at risk are still not in place	
12.11 Environment Canada should ensure that the guidelines to make recommendations for listing species at risk are finalized, made publicly available, and implemented. **(12.8–12.10)**	The Department accepts the recommendation. Guidelines for listing/delisting wildlife species under the *Species at Risk Act* (SARA) were approved in principle in September 2006 by the Deputy Heads Steering Committee for Species at Risk (Environment Canada, Fisheries and Oceans Canada, and Parks Canada), and together with federal regulatory policy have guided subsequent decisions. Due to evolving legislative and policy frameworks in provinces and territories, and the implications of this for SARA, a National Framework for Species at Risk Conservation was developed and endorsed by the Canadian Council of Resource Deputy Ministers in September 2007. As a result, the guidelines for listing/delisting wildlife species under SARA are being reviewed for consistency. Once this federal review is complete, the guidelines will be made public.

Chapter

13

Military Dumpsites

All of the audit work in this chapter was conducted in accordance with the standards for assurance engagements set by The Canadian Institute of Chartered Accountants. While the Office adopts these standards as the minimum requirement for our audits, we also draw upon the standards and practices of other disciplines.

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Previous Audits of Responses to Environmental Petitions
Military Dumpsites

Main Points

What we examined

We sought to determine whether National Defence had made satisfactory progress in addressing key observations from our 2004 audit concerning military dumpsites off Canada's Atlantic coast. In 2004, we noted that the federal government was taking action to identify and assess the risks of these sites in accordance with its response to a petition in 2002. National Defence indicated that it was on target to complete work by 2006 on the Underwater Unexploded Explosive Ordnance (UXO) Project and by 2008 on the Warfare Agent Disposal Project. We made no recommendation in 2004 because it was too early to determine whether the Department would meet the timelines set.

Why it's important

A legacy of chemical, biological, and unexploded explosive ordnance remains from various military activities over the past century at land-based sites across Canada and off its coasts. Historically, these sites have posed only a small risk to Canadians because of their remote locations. Since the end of World War II, however, the sites have faced encroachment from offshore petroleum activities, human interaction, and ocean trawling. Encounters with unexploded explosive ordnance have caused injuries and a number of fatalities since 1940.

What we found

Progress is satisfactory. National Defence has made satisfactory progress in carrying out its commitments to identify and assess the risks of unexploded explosive ordnance and/or chemical and biological warfare agents in ocean-based dumpsites. However, we noted that the identification and risk assessment of these sites are only the first steps in a long-term management approach that will now include almost 700 ocean-based sites and more than 700 land-based sites containing unexploded explosive ordnance.

National Defence has responded. The Department agrees with our recommendation regarding the development of a consistent methodology for charting underwater unexploded explosive ordnance sites on nautical charts and has begun to address it.

Introduction

Unexploded explosive ordnance—Ordnance that has been primed, fused, armed, or otherwise prepared for action, and that has been fired, dropped, launched, or placed in a manner that constitutes a hazard to people, operations, or installations, and remains unexploded by malfunction or for any other reason. Examples include bombs, grenades, shells, mortars, flares, rockets, and mines, including mines used in marine environments.

Warfare agent—A chemical or biological substance identified for use in military operations to incapacitate or kill opposing forces. Examples include mustard gas and anthrax.

13.1 Military activities over the past century off Canada's Atlantic coast have resulted in numerous shipwrecks and other sites where **unexploded explosive ordnance** (UXO) may be present. In addition, at the end of World War II, Canada was one of the countries that disposed of excess chemical and explosive ordnance in ocean waters. National Defence reports that shipwrecks and ocean disposal together have left about 700 sites where unexploded explosive ordnance may be present, 3 of which are known to be **warfare agent** disposal sites. Ocean disposal of warfare agents and unexploded ordnance was acceptable at the time, but Canadian law has prohibited the practice since 1975. A legacy of chemical, biological, and unexploded explosive ordnance remains from these activities, as well as from National Defence's weapons training activities at land-based sites across Canada and on its coasts.

13.2 Historically, these sites have posed only a small risk to Canadians because of their remote locations. However, since the end of World War II, the sites have faced encroachment from off-shore activities, including petroleum exploration and ocean trawling associated with fishing activities. Urban growth has also encroached on previously isolated land-based and inland water sites with residual UXO. Encounters with unexploded explosive ordnance have caused injuries and a number of fatalities since 1940. Documentation provided by National Defence notes that over time the risk posed by these sites increases because of the combination of increased access by the public and the nature of the explosive risk.

National Defence committed to assessing the risks

13.3 Petition 50A, submitted in March 2002, posed questions about the presence of chemical warfare agents and munitions in military dumpsites off Canada's east coast. The petitioner expressed concern about whether all sites had been identified and the potential risks assessed, and whether known sites were adequately marked on charts. Among other things, the petitioner requested that a moratorium be placed on all gas and oil exploration in the near-shore and offshore areas of Canada's Atlantic coast, and that all dumpsites be declared exclusion zones for commercial ground fishing.

13.4 In its response to the petition, National Defence committed to carrying out projects that would continue to identify sites containing chemical and biological warfare agents and ocean disposal sites of

conventional munitions, including shipwrecks. The Department also committed to assessing the risks to human health and the environment, and to setting priorities for subsequent cleanup or other appropriate action. Through the Canadian Hydrographic Service, Fisheries and Oceans Canada committed to charting military dumpsites on the basis of information provided to it by National Defence.

What we found in 2004

13.5 In the Commissioner's 2004 Report, Chapter 6, we reported that the government was taking action to implement its commitments concerning historical military dumpsites off Canada's Atlantic coast. National Defence was leading the efforts. We made no recommendation at that time because it was too early to determine whether the departments involved would meet the timelines set. At the time of the audit, National Defence indicated that it was on target to complete its work by 2006 on the Underwater Unexploded Explosive Ordnance Project and by 2008 on the Warfare Agent Disposal Project. We also found that the departments involved were taking steps to fulfill their commitments to communicate with stakeholders and had only just begun to take action on their commitment to develop a contingency plan.

Focus of the audit

13.6 We sought to determine whether National Defence and Fisheries and Oceans Canada had made satisfactory progress in addressing selected key observations from our 2004 audit.

13.7 More details on the audit objective, scope, approach, and criteria are in **About the Audit** at the end of this chapter.

Observations and Recommendation

National Defence is making progress in identifying and assessing risks



Examples of unexploded explosive ordnance

Source: National Defence

13.8 **Progress is satisfactory.** We analyzed a wide array of studies, reports, and physical site assessments either commissioned or conducted by National Defence to identify and assess the risks of sites with unexploded explosive ordnance or chemical warfare agents, including historical military dumpsites. Although historical research is ongoing, our analysis confirmed that National Defence is making progress in identifying and assessing the risks of these sites (Exhibit 13.1). The unexploded explosive ordnance (UXO) sites have

now been included in the broader Unexploded Explosive Ordnance and Legacy Sites Program, which has a mandate to identify and assess the risks of all ocean- and land-based UXO sites in Canada. Under the Warfare Agent Disposal Project, the Department has also made progress in identifying and assessing the risks of ocean- and land-based sites where chemical and/or biological warfare agents may still exist as a result of past defence activities.

Exhibit 13.1 National Defence initiatives pertaining to ocean- and land-based unexploded explosive ordnance and warfare agent disposal sites

Name and date initiated	Purpose and objectives	Results reported to date by National Defence
Atlantic Underwater Unexploded Explosive Ordnance Project, 2000	To refine and verify historical information on underwater sites off Canada's Atlantic coast containing unexploded explosive ordnance, including depth charges, torpedoes, mines, rockets, fuses, detonators, and explosives. The objective is to use this information to prioritize sites for management.	610 sites identified 47 high-risk sites identified for further action
Pacific Underwater Unexploded Explosive Ordnance Project, 2004	To refine and verify historical information on underwater sites off Canada's Pacific coast containing unexploded explosive ordnance, including depth charges, torpedoes, mines, rockets, fuses, detonators, and explosives. The objective is to use this information to prioritize sites for management.	88 sites identified 20 high-risk sites identified for further action
Unexploded Explosive Ordnance (UXO) and Legacy Sites Program, 2005	To reduce safety risks posed by unexploded explosive ordnance at "legacy sites" (that is, properties not owned by National Defence). The Program has consolidated the information from the Atlantic and the Pacific Underwater Unexploded Explosive Ordnance projects to identify and assess the risk of UXO sites within Canada.	A total of 698 ocean-based sites identified off the Atlantic and Pacific coasts A total of 67 high-risk ocean sites identified for further action More than 700 land-based sites identified
Warfare Agent Disposal Project, 2002	To identify, characterize, and catalogue all ocean- and land-based disposal/destruction sites of chemical and biological warfare agents and munitions. Sites will be prioritized according to the risks they may pose to human health and the environment.	111 sites identified 4 sites identified for further risk assessments

Source: National Defence

13.9 The Atlantic Underwater Unexploded Explosive Ordnance Project was completed in 2006. This project was established to identify and assess the risks posed by underwater UXO sites off Canada's Atlantic coast. During our 2004 audit, National Defence indicated that the project was to be completed by 2006. Given the complexity of the work, we are satisfied with the progress made. Department officials have identified 610 sites where unexploded explosive ordnance may be present. Of these, 47 high-risk sites have been identified and a preliminary risk assessment of each site has been completed. However, historical research is ongoing and we noted that National Defence does not make full use of information held by other organizations, including off-shore petroleum boards, which may help identify underwater explosive ordnance sites. National Defence could possibly identify additional sites by reviewing other documents that were not included in the historical research undertaken in 2001.

13.10 The Pacific Underwater Unexploded Explosive Ordnance Project is scheduled for completion in 2009. This project was established in 2004 to identify and assess the risks posed by underwater UXO sites off Canada's Pacific coast. Department officials told us they have identified 88 sites where unexploded explosive ordnance may be present. Of these sites, 20 high-risk sites have been identified and a preliminary risk assessment of each site has been completed. This project is now being managed under the Unexploded Explosive Ordnance and Legacy Sites Program. We are satisfied with the progress made.

13.11 The Unexploded Explosive Ordnance and Legacy Sites Program was established to manage all UXO sites. In 2006, National Defence transferred the Atlantic and Pacific projects into the new Unexploded Explosive Ordnance and Legacy Sites Program, which has a mandate to identify and assess the risks of all ocean- and land-based unexploded explosive ordnance sites within Canada's boundaries. All sites will undergo risk assessments using the same methodology to ensure that attention is directed to the highest-risk sites. National Defence was able to identify 698 ocean-based sites within Canadian waters and more than 700 land-based sites. Officials noted that certain land-based sites present a more immediate and potentially higher risk to Canadians because of their accessibility and proximity to major population centres. The Department told us that all of the site identification and preliminary risk assessment work for the ocean-based sites is to be completed by 2009, with a subsequent schedule to be established for managing or remediating the sites. A timeline for assessing the risks of the land-based sites has not yet been established.

Some risk management and remediation activities are under way. The Department also told us that it will seek funding for the remediation of high-risk sites once all of the risk assessments are completed.

13.12 The Warfare Agent Disposal Project is scheduled for completion in 2008. The objective of this project is to identify and assess the risks of all ocean- and land-based sites containing chemical and biological warfare agents. During our 2004 audit, National Defence indicated that this project was to be completed by 2008.

13.13 National Defence identified 111 sites, of which 4 required further assessment. These include 3 ocean-based sites that have been charted by the Canadian Hydrographic Service and that are undergoing site-specific assessments. These assessments will include current research on factors affecting the chemical warfare agents, including salinity, temperature, ocean currents, and degradation of storage containers. The assessments will not include samples of the soil, water, or marine life. The site-specific assessments are scheduled to be completed by April 2008 and will determine the Department's ongoing management of these sites. A detailed physical assessment of a land-based site under private ownership was done in 2007, and no evidence of residual warfare agents was identified. National Defence has made satisfactory progress on the Warfare Agent Disposal Project, given the complexity of the issues.

13.14 A contingency plan and communication programs have been developed. Based on our observations from the 2004 audit, we expected to find a contingency plan in place for dealing with a possible ecological disaster caused by underwater dumpsites associated with the Warfare Agent Disposal Project. National Defence is currently finalizing a formal contingency plan, in conjunction with other responsible federal parties, and it is expected to be approved in 2008. The contingency plan provides situational scenarios and specifies the actions to be taken by various federal departments and agencies. In addition, the Department has developed websites for both the Unexploded Explosive Ordnance and Legacy Sites Program and the Warfare Agent Disposal Project; the aim is to better inform Canadians of the risks posed by these sites and the actions that National Defence is taking to address the issues. We found the Department has made satisfactory progress on the contingency plan for the Warfare Agent Disposal Project and on its communication programs for the Warfare Agent Disposal Project and the UXO and Legacy Sites Program.

Not all sites are identified on nautical charts

13.15 During our 2004 audit, we noted that the Canadian Hydrographic Service of Fisheries and Oceans Canada committed to marking disposal sites on nautical charts. Identifying the location of disposal sites on nautical charts helps raise awareness that activities in these locations could have an impact on human health and the environment. We expected to observe progress in recording the position of unexploded explosive ordnance and warfare agent disposal sites on nautical charts. Although the Canadian Hydrographic Service has charted all sites that National Defence has identified to it, including the three ocean-based Warfare Agent Disposal sites, National Defence has not provided information on all the known high-risk UXO sites to the Canadian Hydrographic Service for charting. We noted that no additional sites have been charted since our last audit in 2004.

13.16 National Defence officials told us that some sites are not charted because of limited historical data and public safety and security concerns. Officials agreed that they do not yet have a uniform methodology for evaluating which sites should be charted. We believe that this has led to an inconsistent approach in charting these sites. Accordingly, progress on this aspect is unsatisfactory given the incomplete and inconsistent charting work done to date (Exhibit 13.2).

Exhibit 13.2 **Progress in addressing three of our four findings on military dumpsites is satisfactory**

Findings	Progress
The Warfare Agent Disposal Project is scheduled for completion in 2008. (2004 CESD Report, Chapter 6, see paragraph 6.52)	Satisfactory
The Underwater Unexploded Explosive Ordnance Project was scheduled for completion in 2006. (2004 Commissioner of the Environment and Sustainable Development (CESD) Report, Chapter 6, see paragraph 6.56)	Satisfactory
National Defence and Fisheries and Oceans Canada will mark dumpsites on navigation charts. (2004 CESD Report, Chapter 6, see paragraph 6.62)	Unsatisfactory*
National Defence will develop a contingency plan. (2004 CESD Report, Chapter 6, see paragraph 6.63)	Satisfactory

Satisfactory—Progress is satisfactory, given the significance and complexity of the issue, and the time that has elapsed since the finding was made.

Unsatisfactory—Progress is unsatisfactory, given the significance and complexity of the issue, and the time that has elapsed since the finding was made.

* This rating applies to National Defence only.

13.17 Recommendation. National Defence should develop and implement a consistent methodology for charting underwater unexploded explosive ordnance sites on nautical charts.

National Defence's response. The Department agrees with this recommendation and is already working to address this matter. Charting of sites is a key component of the risk management process for offshore underwater sites where there is a potential threat to public safety.

The Department is currently defining its decision-making process from the time a site is identified through to the point when the decision is made whether or not to chart the site. This process is being documented in collaboration with the Canadian Hydrographic Service. A periodic review process is also being put in place to regularly revisit sites in order to validate prior actions taken.

Work is ongoing and we fully expect our process to be completely documented and in place by the summer of 2008. It is also expected that all offshore sites will be examined using this process by the summer of 2009.

Conclusion

13.18 National Defence has made satisfactory progress in addressing key observations from the 2004 audit. It has identified and assessed the risks of chemical and biological warfare agents and unexploded explosive ordnance in accordance with its Underwater Unexploded Explosive Ordnance projects and the Warfare Agent Disposal Project. A contingency plan for dealing with a possible ecological disaster caused by underwater disposal sites associated with the Warfare Agent Disposal Project is being finalized. Communications programs are complete for both the Unexploded Explosive Ordnance and Legacy Sites Program and the Warfare Agent Disposal Project. However, we found that progress in charting the sites on nautical maps is unsatisfactory due to an inconsistent approach used by National Defence to provide the Canadian Hydrographic Service with charting information on known underwater unexploded explosive ordnance sites. We also noted that the identification and assessment of these sites are only the first steps in a long-term management approach that will now include almost 700 ocean-based sites and more than 700 land-based sites containing unexploded explosive ordnance.

About the Audit

Objective

Our objective was to determine whether National Defence and Fisheries and Oceans Canada had achieved satisfactory progress in addressing key observations made in the 2004 audit of military dumpsites.

Scope and approach

Since 2003, the Commissioner has conducted 11 petition response audits on a wide variety of subjects. To identify which of the 11 were suitable for follow-up audit, we examined the information available in our recommendations database, consulted staff involved in the original audits, conducted research, and met with departmental officials. To rank the audits for potential follow-up audit work, we developed criteria based on internal guidance for performance audits.

We also considered criteria pertaining to auditability, sensitivity, risk, and availability of resources. On the basis of assessments against these criteria, an advisory committee considered the top-ranked issues and selected four. The results for each of these audits are individually reported in four chapters—11, 12, 13 (this chapter), and 14.

In this follow-up audit, we evaluated the progress that National Defence and Fisheries and Oceans Canada had made on key observations in the Commissioner's 2004 Report, Chapter 6, paragraphs 6.52, 6.56, 6.62, and 6.63. To do so, we reviewed documentation and files and interviewed departmental officials and external experts.

Criteria

Our criteria for the audit were derived from key observations made during our 2004 audit of military dumpsites. We expected that

- National Defence would have completed the Underwater Unexploded Explosive Ordnance Project by 2006;
- National Defence would be able to demonstrate satisfactory progress toward completing the Warfare Agent Disposal Project in 2008;
- together with Fisheries and Oceans Canada, National Defence would have recorded the position of unexploded explosive ordnance and warfare agent disposal sites on navigation charts; and
- National Defence would have developed a contingency plan for dealing with an ecological disaster caused by underwater dumpsites.

Audit work completed

Audit work for this chapter was substantially completed on 13 November 2007.

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Appendix List of recommendations

The following recommendation is found in Chapter 13. The number in front of the recommendation indicates the paragraph number where it appears in the chapter. The numbers in parentheses indicate the paragraph numbers where the topic is discussed.

Recommendation	Response
Not all sites are identified on nautical charts	
13.17 National Defence should develop and implement a consistent methodology for charting underwater unexploded explosive ordnance sites on nautical charts. **(13.15–13.16)**	The Department agrees with this recommendation and is already working to address this matter. Charting of sites is a key component of the risk management process for offshore underwater sites where there is a potential threat to public safety. The Department is currently defining its decision-making process from the time a site is identified through to the point when the decision is made whether or not to chart the site. This process is being documented in collaboration with the Canadian Hydrographic Service. A periodic review process is also being put in place to regularly revisit sites in order to validate prior actions taken. Work is ongoing and we fully expect our process to be completely documented and in place by the summer of 2008. It is also expected that all offshore sites will be examined using this process by the summer of 2009.

Chapter

14

Genetically Engineered Fish

All of the audit work in this chapter was conducted in accordance with the standards for assurance engagements set by The Canadian Institute of Chartered Accountants. While the Office adopts these standards as the minimum requirement for our audits, we also draw upon the standards and practices of other disciplines.

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Previous Audits of Responses to Environmental Petitions
Genetically Engineered Fish

Main Points

What we examined

We sought to determine whether Fisheries and Oceans Canada had made satisfactory progress in addressing a recommendation from our 2004 audit, which found that the Department had made little progress on developing regulations and a policy framework covering genetically engineered fish. These were commitments made in response to a petition in 2001. In its response to our audit, Fisheries and Oceans Canada agreed to develop a regulatory approach and a new policy by 2005.

Why it's important

Research on genetically engineered (GE) fish and other aquatic organisms began in the early 1980s and has increased rapidly around the world. GE fish are being developed for use in medical applications, to detect pollution, and as aquarium pets. The aquaculture industry is developing GE fish that grow faster than wild fish and that better tolerate cold temperatures. There are concerns about the potential ecological impacts of an accidental release of GE fish into natural ecosystems. For example, faster-growing GE fish may out-compete wild fish for food and territory. Canada's current regulations in this area have weaknesses.

What we found

Progress is unsatisfactory. Since the establishment of the Federal Biotechnology Regulatory Framework in 1993, Fisheries and Oceans Canada has frequently committed to developing regulations covering transgenic aquatic organisms, including genetically engineered fish. Although it has been working on this matter since 1993, Fisheries and Oceans Canada has not made satisfactory progress toward completing the regulations.

Fisheries and Oceans Canada has responded. Fisheries and Oceans Canada has accepted our recommendation. The Department has decided that the *Canadian Environmental Protection Act, 1999* (CEPA, 1999) provides the regulatory framework for GE fish. It is participating in a CEPA, 1999 regulatory review that may address the issues raised in this audit.

Introduction

Genetically engineered organism—An organism with genes that have been altered in a way not occurring in nature.

14.1 Research on genetically engineered (GE) organisms, including GE fish and other aquatic organisms, began in the early 1980s and has increased rapidly around the world. GE fish are being developed for use in medical applications, to detect pollution, and as aquarium pets. The aquaculture industry is developing GE fish that grow faster than wild fish and that better tolerate cold temperatures.

14.2 Canada does not yet have commercial farming of GE fish, but research is under way that could result in its introduction into Canada. In Prince Edward Island, for example, a United States-based company incorporated a Canadian subsidiary in January 1994, establishing a commercial biotechnology laboratory. This company has been conducting research and working on developments related to the commercialization of GE fish. The company has applied for regulatory approval in the United States, and in late 2006 the US Food and Drug Administration took the first step toward approving GE salmon for human consumption. Canadian government officials note that it is reasonable to expect a similar application for approval of GE fish in Canada.

14.3 Certain scientists, regulators, and members of the public are concerned about the potential ecological impacts of an accidental release of GE fish into natural ecosystems. Faster-growing GE fish may out-compete wild fish for food and territory. Scientists are only beginning to understand the potential effects of GE fish on the natural environment.

14.4 The 1993 Federal Biotechnology Regulatory Framework resulted from an agreement among federal regulatory departments and agencies on principles for an efficient and effective approach to regulating biotechnology products, with a high priority on health, safety, and the environment. The Framework established that various departments and agencies would regulate products of biotechnology within their area of expertise.

14.5 Fisheries and Oceans Canada is the lead federal department responsible for the conservation and sustainable use of Canada's fisheries resources. These responsibilities include developing and implementing related policies and programs; managing fisheries, habitat, and aquaculture; and conserving and protecting aquatic ecosystems. However, without specific fisheries regulations in this area, the regulation of aquatic products of biotechnology, such as GE fish,

currently resides with Environment Canada and Health Canada under the *Canadian Environmental Protection Act, 1999*.

Fisheries and Oceans Canada committed to developing regulations

14.6 In November 2001, petition 38A on GE fish was submitted. The petition asked for information on the regulation of GE fish, as well as confirmation of the federal government's policy on the rearing of GE fish in Canada. In response to the petition, Fisheries and Oceans Canada committed to developing regulations under the *Fisheries Act* for aquatic organisms with novel traits, including GE fish.

What we found in 2004



Transgenic (right) and non-transgenic (left) coho salmon at one year of age.

Source: Fisheries and Oceans Canada

14.7 In 2004, we reported that Fisheries and Oceans Canada had made little progress on its commitment, even though 12 years earlier it had recognized the need for regulations dealing with aquatic biotechnology. In our recommendation we stated, "Fisheries and Oceans Canada should determine whether or not it will develop regulations on genetically engineered (GE) fish. If it decides to proceed with regulations, it should identify a clear timeline for completing the regulations, establish a work plan, and report publicly on its progress." Fisheries and Oceans Canada accepted our audit recommendations and agreed to review regulatory options, decide on a regulatory strategy, and develop appropriate timelines for regulatory action, all by the end of 2005. The Department also agreed to revise and finalize its policy on transgenic aquatic organisms by the same date.

Focus of the audit

14.8 We sought to determine whether Fisheries and Oceans Canada had made satisfactory progress in addressing a recommendation from our 2004 audit on GE fish.

14.9 More details on the audit objective, scope, approach, and criteria are in **About the Audit** at the end of this chapter.

Observations and Recommendation

14.10 We expected Fisheries and Oceans Canada to have reviewed regulatory options, decided on a regulatory strategy, created appropriate timelines for regulatory action, and finalized a policy on GE fish by the end of 2005. In our view, new regulations could address the weaknesses of Canada's current regulations in this area. This includes the need to

strengthen oversight of research and develop mandatory reporting requirements for GE fish and for accidental releases of genetically engineered organisms into the environment.

Fisheries and Oceans Canada has decided not to develop a policy

14.11 In response to our 2004 audit, Fisheries and Oceans Canada indicated it would develop a policy on transgenic aquatic organisms by the end of 2005. However, the Department no longer intends to develop a policy as it now recognizes that the *Canadian Environmental Protection Act, 1999* (CEPA, 1999), including the *New Substances Notification Regulations (Organisms)*, achieves the Department's intended policy objective of protecting fish and fish habitat from the potential risks of products of aquatic biotechnology. Department officials told us that the 2004 commitment to revise and finalize a policy in response to our audit was made without a full understanding of the applicable CEPA, 1999 provisions.

Fisheries and Oceans Canada has not yet finalized its regulatory strategy

14.12 Our follow-up audit found that Fisheries and Oceans Canada has reviewed its regulatory options but has not yet finalized its regulatory strategy and developed timelines for regulatory action.

14.13 Currently, Environment Canada and Health Canada regulate GE fish under the *New Substances Notification Regulations (Organisms)* of CEPA, 1999. Department officials told us that the Act functions as a safety net for new substances proposed for import or manufacture, including research and development activities on genetically engineered organisms that are not covered by other legislation. The *New Substances Notification Regulations (Organisms)* under CEPA, 1999, prescribe the information that must be provided to Environment Canada prior to the proposed import to or manufacture in Canada of a new organism that is an animate product of biotechnology. However, under the contained research and development exemption to these regulations, research and development organisms are not required to undergo the same notification and risk assessment process. While researchers and developers are still required to meet the containment provisions of the Regulations, some weaknesses exist, including the following:

- Departmental officials have incomplete knowledge of research and development activities because proponents are not required to disclose that they are conducting research; and

- There is no mandatory reporting of an accidental release of a research and development organism into the environment. Although such a breach is subject to Environment Canada's compliance and enforcement policy, the Department could only act on it once it became aware of the breach.

The result of these weaknesses is that the extent of research under way in Canada and any accidental release of GE fish may not be fully known.

14.14 In 2004, Environment Canada and Health Canada began, with Fisheries and Oceans input, to consult with the regulated community about potential changes to the *New Substance Notification Regulations (Organisms)* under CEPA, 1999. This consultation is intended in part to address the weaknesses noted above in dealing with organisms intended for research and development activities, beginning with sections of the Regulations dealing with organisms other than micro-organisms (for example, GE fish). The first phase of these consultations is expected to be concluded in 2008; however, department officials could provide no specific timeline for revisions to the Regulations.

14.15 Fisheries and Oceans Canada has repeatedly missed deadlines for completing regulations. Since the Federal Biotechnology Regulatory Framework was established in 1993, Fisheries and Oceans Canada has frequently committed to developing regulations for transgenic aquatic organisms, including genetically engineered fish, and has repeatedly missed deadlines for completing them. We noted that the Department's earlier draft policies and guidelines on GE fish contained guidelines for the physical and genetic containment of transgenic organisms in research facilities. For example, the Department's 2000 draft policy contained explicit guidelines for containment and set out detailed research and development requirements, including mandatory review and approval processes for facilities.

14.16 Until the *New Substances Notification Regulations (Organisms)* under CEPA, 1999 are amended or new *Fisheries Act* regulations are created, Canada's regulatory approach to addressing genetically engineered aquatic organisms, such as GE fish, will continue to have weaknesses. Fisheries and Oceans Canada officials told us that, in 2006, the Department determined that no new regulations would be developed until new funding was obtained. Officials indicated that the Department will decide on a regulatory approach and allocate resources for developing and implementing regulations provided that it obtains an appropriate new mandate and resources. During our audit, we saw no evidence that regulations are a priority for the Department (Exhibit 14.1).

Exhibit 14.1 **Progress in addressing our recommendation on regulations for genetically engineered fish is unsatisfactory**

Recommendation	Progress
Fisheries and Oceans Canada should determine whether or not it will develop regulations on genetically engineered (GE) fish. If it decides to proceed with regulations, it should identify a clear timeline for completing the regulations, establish a work plan, and report publicly on its progress. (2004 Report of the Commissioner of the Environment and Sustainable Development, Chapter 6, paragraph 6.80)	Unsatisfactory

Satisfactory—Progress is satisfactory, given the significance and complexity of the issue, and the time that has elapsed since the recommendation was made.

Unsatisfactory—Progress is unsatisfactory, given the significance and complexity of the issue and the time that has elapsed since the recommendation was made.

14.17 Recommendation. Given its commitments and the history of this file, Fisheries and Oceans Canada should decide on a regulatory approach for genetically engineered fish and clearly communicate the rationale and timeline for implementation of this approach.

Fisheries and Oceans Canada's response. Fisheries and Oceans Canada (DFO) accepts the recommendation. DFO has decided that its regulatory approach for genetically engineered fish is to continue to work under the terms of a Memorandum of Understanding (MOU) with Environment Canada and Health Canada to contribute to the regulation of aquatic organism products of biotechnology, including genetically engineered fish, under the *Canadian Environmental Protection Act, 1999* (CEPA, 1999) and the *New Substances Notification Regulations (Organisms)* [NSNR(O)].

The recommendation also suggests that Fisheries and Oceans Canada clearly communicate the rationale and timeline for implementation of this approach. The rationale for implementation of this approach is based on the fact that CEPA, 1999 provides a regulatory framework for animate products of biotechnology that is in place and is effective, and the NSNR(O) are currently already undergoing regulatory review. DFO's responsibilities under the MOU include undertaking risk assessments and assisting Environment Canada and Health Canada with administration of the Regulations. As DFO is already implementing this approach, no further timeline is required.

Conclusion

14.18 Although regulations on transgenic aquatic organisms, including genetically engineered fish, have been under development since the early 1990s, Fisheries and Oceans Canada has still not made satisfactory progress in developing them. The Department committed to developing these regulations in response to a petition in 2001 and in response to our audit in 2004.

About the Audit

Objective

Our objective was to determine whether Fisheries and Oceans Canada had achieved satisfactory progress in addressing commitments made in response to a recommendation in our 2004 audit of genetically engineered fish.

Scope and approach

Since 2003, the Commissioner of the Environment and Sustainable Development (CESD) has conducted 11 petition response audits on a wide variety of subjects. To identify which of the 11 were suitable for follow-up audit, we examined the information available in our recommendations database, consulted staff involved in the original audits, and conducted research. To rank the audits for potential follow-up audit work, we developed criteria based on internal guidance on performance auditing.

We also considered criteria pertaining to auditability, sensitivity, risk, and availability of resources. On the basis of assessments against these criteria, an advisory committee considered the top-ranked issues and selected four. The results for each of these audits are individually reported in four chapters—11, 12, 13, and 14 (this chapter).

In this follow-up audit, we evaluated the progress that Fisheries and Oceans Canada had made in addressing a recommendation in our 2004 CESD Report, Chapter 6, paragraph 6.80. To do so, we reviewed documentation and interviewed government officials and external experts in the field.

Criteria

The criteria for the audit were derived from the findings and recommendations of our 2004 audit of genetically engineered fish, and in particular, Fisheries and Oceans Canada's response to the above-noted recommendation of that audit (Chapter 6, paragraph 6.80). We expected that by the end of 2005, Fisheries and Oceans Canada would have

- reviewed regulatory options for genetically engineered fish,
- decided on a regulatory strategy,
- developed appropriate timelines for regulatory action, and
- finalized its policy on transgenic aquatic organisms.

Audit work completed

Audit work for this chapter was substantially completed on 16 October 2007.

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Appendix List of recommendations

The following recommendation is found in Chapter 14. The number in front of the recommendation indicates the paragraph number where it appears in the chapter. The numbers in parentheses indicate the paragraph numbers where the topic is discussed.

Recommendation	Response
Fisheries and Oceans Canada has not yet finalized its regulatory strategy	
14.17 Given its commitments and the history of this file, Fisheries and Oceans Canada should decide on a regulatory approach for genetically engineered fish and clearly communicate the rationale and timeline for implementation of this approach. **(14.12–14.16)**	Fisheries and Oceans Canada (DFO) accepts the recommendation. DFO has decided that its regulatory approach for genetically engineered fish is to continue to work under the terms of a Memorandum of Understanding (MOU) with Environment Canada and Health Canada to contribute to the regulation of aquatic organism products of biotechnology, including genetically engineered fish, under the *Canadian Environmental Protection Act, 1999* (CEPA, 1999) and the *New Substances Notification Regulations (Organisms)* [NSNR(O)]. The recommendation also suggests that Fisheries and Oceans Canada clearly communicate the rationale and timeline for implementation of this approach. The rationale for implementation of this approach is based on the fact that CEPA, 1999 provides a regulatory framework for animate products of biotechnology that is in place and is effective, and the NSNR(O) are currently already undergoing regulatory review. DFO's responsibilities under the MOU include undertaking risk assessments and assisting Environment Canada and Health Canada with administration of the Regulations. As DFO is already implementing this approach, no further timeline is required.

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The March 2008 Status Report of the Commissioner of the Environment and Sustainable Development comprises The Commissioner's Perspective—2008, Main Points—Chapters 1 to 14, Appendices, and 14 chapters. The main table of contents for the Report is found at the end of this publication.

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Commissioner of the Environment and Sustainable Development of Canada
Commissaire à l'environnement et au développement durable du Canada
Office of the Auditor General of Canada • Bureau du vérificateur général du Canada

To the Honourable Speaker of the House of Commons:

On behalf of the Auditor General of Canada, I have the honour to transmit herewith my Report to the House of Commons for 2008, which is to be laid before the House in accordance with the provisions of section 23(3) of the *Auditor General Act*.

Ron Thompson, FCA
Interim Commissioner of the Environment
and Sustainable Development

OTTAWA, 6 March 2008

To the reader:

I welcome your comments and suggestions on this Report and other issues related to the environment and sustainable development. I can be reached at the following address:

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The Commissioner's Perspective—2008



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Ron Thompson, FCA
Interim Commissioner of the Environment
and Sustainable Development

Introduction

Over the past decade, commissioners of the Environment and Sustainable Development have reported on more than 70 audits and studies to Parliament. These reports have examined how well government departments and agencies have managed environment and sustainable development issues.

For this report, we have done something a bit different. We have followed up on selected recommendations and findings from prior reports to determine if satisfactory progress has been made in addressing them. In doing so, we consider the time elapsed since our original report and the complexity and degree of difficulty of remedial action by government.

Status reports focus attention on significant recommendations and findings until they have been addressed and resolved. As such, they provide relevant information to Parliament for use by various standing committees in holding departments and agencies to account for actions taken and planned.

What do we cover in this report?

The recommendations and findings that we selected for follow up are those that we consider to be significant and relevant to parliamentary oversight and scrutiny, both today and in the coming years. They cover a broad range of topics, including chemicals management, the protection of species at risk and their habitats, the control of aquatic invasive species such as zebra mussels, the restoration of heavily polluted areas of concern in the Great Lakes, the use of management tools designed to get departments and agencies to anticipate and minimize future environmental problems, and actions taken in response to environmental petitions.

The recommendations and findings included in this Status Report were addressed to a number of government administrations over the past decade or so and were included in commissioners' reports to a number of parliaments over that time. With few exceptions, the government agreed with our recommendations and made commitments to take action.

What did we find?

We found mixed progress by departments and agencies in addressing and resolving the recommendations and findings included in this Status Report. Of the fourteen chapters in the report, five show satisfactory progress and nine show unsatisfactory progress. Where satisfactory progress was made, four success factors were present—realistic objectives, strong commitment at senior levels, clear direction, and adequate resources. Where progress was unsatisfactory, some or all of these factors were absent.

We report satisfactory progress in addressing recommendations and findings in our three chapters on chemicals management, our chapter on insurance for nuclear operators, and our chapter on military dumpsites. In each of these five chapters, the success factors were present. For example, Chapter 3 notes that in dealing with abandoned mines in the North, the government identified the major ones, created a central management capability to work with individual departments and agencies, established a clear work plan with timelines, and provided significant funding.

Unfortunately, we report unsatisfactory progress in addressing recommendations and findings on the other topics covered in this Status Report. In each case, we observed lack of commitment at senior levels, and often inadequate funding. Our chapters dealing with protection of species at risk and their habitat, control of aquatic invasive species, and the restoration of heavily polluted areas of concern in the Great Lakes provide ample evidence of this.

Of particular concern is the poor performance by departments and agencies in conducting strategic environmental assessments when developing policy and program proposals. These assessments are required when proposals that are submitted to Cabinet have an environmental impact. Public reporting is required whenever assessments are done. This is similar to the situation we found last October when examining sustainable development strategies where performance was also poor. Once again, the lack of commitment at senior levels is a root cause of these problems. Strategic environmental assessments and sustainable development strategies need to be revitalized on a priority basis in order to help the government address environmental issues of the past, avoid similar issues in the future, and achieve sustainable development over the longer term.

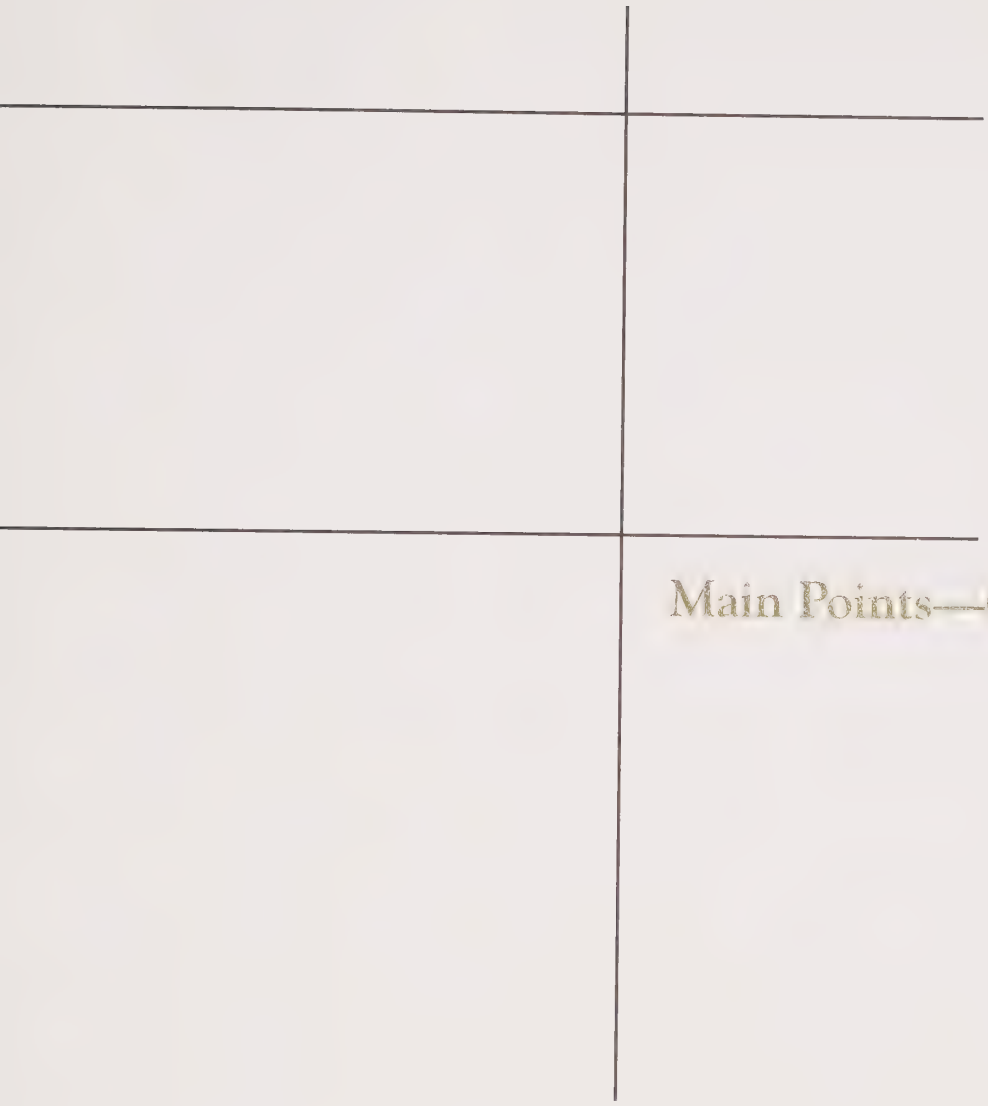
What needs to change?

The many environmental challenges faced by the government cannot all be addressed at the same time with the same intensity. In addition to the topics covered in this Status Report, the government is facing other environmental challenges—including climate change, the theme of the Commissioner's 2006 Report. It will be important for the government to develop clear and realistic overall objectives that are specific and measurable, with targets and milestones, in order to ensure that its many environmental challenges are addressed in a practical and coordinated manner by departments and agencies. Once an overall plan is in place, it needs to be brought to life by establishing clear and realistic department objectives, strong commitment at senior levels, clear direction, and adequate funding.

But as important as it is to address environmental challenges that exist today, it is equally important to anticipate new challenges and new opportunities that may arise tomorrow. Doing this would help the government get ahead of the curve and develop policies and programs to mitigate the challenges and exploit the opportunities. Strategic environmental assessments and sustainable development strategies are management tools put in place to get departments and agencies to do this. Unfortunately, both tools are broken; they need to be fixed.

Conclusion

We hope that this Status Report provides relevant information to Parliament for use by its standing committees in holding departments and agencies to account for the quality of their management of environment and sustainable development issues. As always, we would be pleased to help these committees in any way we can as they carry out this important work on behalf of all Canadians.



Main Points—Chapters 1 to 14



Chemicals Management

Substances Assessed under the *Canadian Environmental Protection Act, 1999*

Chapter 1 Main Points

What we examined

About 23,000 chemical substances used commercially in Canada were included in an inventory published in 1994, the Domestic Substances List. Under the *Canadian Environmental Protection Act, 1999* (CEPA, 1999), Environment Canada and Health Canada are responsible for identifying which of these substances present an unacceptable risk to human health and the environment. Once identified as toxic, a substance is controlled according to the degree of risk it presents. By 1995, the government had listed 69 substances or groups of substances that it had determined were priorities for assessment.

In 2002, we reported that Environment Canada and Health Canada were taking too long to complete the assessments and publish decisions on all 69 substances so controls could be put in place for managing their risks when necessary.

For this status report, we examined the progress made by Environment Canada and Health Canada in managing risk assessments under CEPA, 1999, including the status of the 69 priority substances. We also looked at the departments' initiative for addressing new risk assessment priorities out of the 23,000 substances on the Domestic Substances List.

Why it's important

Chemical substances enter our air, water, land, and food from many sources. Because Canadians cannot always tell which chemical substances they may come in contact with, they rely on government to ensure that chemicals in the Canadian market present no unacceptable risks to their health and the environment.

What we found

- The federal government has made satisfactory progress since 2002 in managing risk assessments of chemical substances that could be toxic.
- In September 2006, as a result of an initial review of the Domestic Substances List, Environment Canada and Health Canada identified 4,300 substances that needed further assessment. To complete the assessments by 2020, the departments have adjusted the risk assessment process based on lessons learned from previous evaluations, set clear objectives and timelines, and identified

priorities, and they are taking steps to ensure that they will have enough resources to do the work.

- The risk assessments of priority substances that were underway in 2002 have been completed for the most part. However, the assessments of three of those substances have yet to be finalized—even though the departments have evidence that two of them are likely toxic and present risks to human health and the environment. Until the government concludes whether the outstanding chemical substances are toxic, no measures under CEPA, 1999 can be put in place to control the risks they may represent.

The departments have responded. Environment Canada and Health Canada have accepted our recommendation. Their detailed responses follow the recommendation in the chapter.



Chemicals Management
Pesticide Safety and Accessibility

Chapter 2 Main Points

What we examined

Health Canada's Pest Management Regulatory Agency is the federal agency responsible for regulating pesticides in Canada. The Agency's primary objective is to prevent unacceptable risks to people and the environment from the use of pesticides. It does this by evaluating proposed new pesticides and registering the acceptable ones for use in Canada, re-evaluating older pesticides against current health and environmental standards, and setting the maximum levels of residues of active ingredients allowable on foods. The Canadian Food Inspection Agency also plays a role by testing whether the residues of active ingredients used in pesticides are within allowable limits in fresh fruits and vegetables that are imported or intended for export or inter-provincial trade.

This audit examined the progress made by the federal government in selected aspects of managing the safety and accessibility of pesticides since our 2003 audit. We looked at the Pest Management Regulatory Agency's application of its own procedures for evaluating and registering new pesticides, the application of its own procedures for re-evaluating older registered pesticides, and the time it takes to get new, possibly safer pesticides on the market for use.

We also looked at the progress made by the Canadian Food Inspection Agency in increasing the scope of its program that tests for residues of active ingredients in fresh fruits and vegetables.

Why it's important

Many pesticides are designed to be toxic to pests. They play an important role in maintaining Canada's food supply by protecting food crops. Canadians also use pesticides to control weeds on lawns, insects in gardens and homes, and parasites on pets. There are approximately 5,000 pesticides currently registered for use in Canada. When used improperly, pesticides can have serious consequences for human health and the environment, which can range from respiratory tract problems to cancer or the death of fish or birds.

What we found

- Since our 2003 audit, the federal government has made satisfactory progress in selected aspects of managing the safety and accessibility of pesticides. We concluded that based on our sample of newly registered pesticides, the Pest Management Regulatory Agency has applied its procedures for evaluating new pesticides consistently, completely, and with adequate documentation. It ensures that companies applying to register a new pesticide submit all the information needed, at the required standard of quality, to assess the risks associated with the pesticide. It has shortened the time it takes to evaluate new pesticides while still following all the steps in its evaluation process. The Agency has taken action to give Canadian growers access to new, more effective, and possibly safer pesticides—particularly minor-use pesticides (those used in small quantities or on crops where few pest control options exist), which manufacturers tend not to register in Canada because of low potential sales volumes.
- The Pest Management Regulatory Agency is consistently applying its procedures to re-evaluate older pesticides that were registered before new standards were put in place in 1995. Although it has completed a number of re-evaluations since our last audit, many more await completion and the Agency's target continues to change. In addition, the Agency never developed a detailed action plan to help meet its timelines.
- The Canadian Food Inspection Agency has increased the number of active ingredients it analyzes in its program that tests for residues in fresh fruits and vegetables. The Agency now has more information on the active ingredients that are not included in its residue testing program. It is in the early stages of assessing which of these active ingredients are priorities for attention, based on their toxicity and the potential for human exposure to them.



Chemicals Management
Federal Contaminated Sites

Chapter 3 Main Points

What we examined

As of October 2007, the federal government had identified about 17,800 sites under its responsibility that it knows or suspects are contaminated by substances, including petroleum products, heavy metals, and chemicals. The known sites have been contaminated by the federal government's regular operations, by tenants on its lands, and by others, during decades of use in the absence of today's environmental standards. The federal government has also assumed responsibility for contaminated sites such as abandoned mines North of 60°.

In 2002 we reported that 13 years after it began to tackle contaminated sites, the federal government did not know how many sites it had, the health and environmental risks they represented, or the likely cost of cleaning them up. Nor was it providing central leadership and an action plan for dealing with the higher-risk sites.

For this status report, we looked at the progress made since 2002 by four departments in dealing with contaminated sites under their responsibility, which together account for approximately 89 percent of the federal government's known and suspected contaminated sites. We also looked at whether stronger central leadership has been provided to deal with (including assessing, risk managing, or cleaning up) priority sites.

Why it's important

Unless they are managed properly, contaminated sites can negatively impact surrounding water, soil, and air, threatening human health and the environment. They also take valuable land out of productive use and can jeopardize the way of life of those who live off the land.

What we found

- The government has made satisfactory progress in managing its contaminated sites. The government initially allocated approximately $1.5 billion over five years as a first instalment of its $3.5 billion budgetary announcement to manage priority contaminated sites. It has also developed the Federal Contaminated Sites Action Plan with the objectives of effectively eliminating the financial liability associated with its contaminated sites by 2020 and reducing the risks to human health and the environment. It has determined that

contaminated sites under its responsibility represent a liability of about $3.1 billion (this excludes approximately $2.9 billion to decommission nuclear facilities).

- The four departments we audited are putting significant effort into managing their contaminated sites. They have remediated about 340 sites, and about 480 others are undergoing remediation. All four departments developed management plans. These plans include some time-bound commitments for dealing with their contaminated sites in order to meet the program's objective of reducing the risk they pose to human health and the environment. During our audit, the Treasury Board of Canada Secretariat issued additional guidance to departments to help ensure that their planned actions are aligned with and will contribute to the federal objective of effectively eliminating the financial liability for known sites by 2020.
- The government found that approximately 66 percent of known contaminated sites under federal responsibility are contaminated by petroleum products. Regulations requiring federal departments to keep an inventory of their petroleum storage tanks were put in place in 1997 but had significant gaps and were not always followed. New regulations requiring departments to take action on their petroleum storage tanks were proposed in 2007—four years later than promised. Although the proposed Regulations will require tanks found to be leaking to be withdrawn from service immediately, their full effect will not come into force up to four years after the Regulations are put in place. Tanks considered to be at high risk of leaking could remain in service until then.



Ecosystems
Federal Protected Areas for Wildlife

Chapter 4 Main Points

What we examined

Environment Canada is responsible for managing 51 national wildlife areas and 92 migratory bird sanctuaries. These sites are established under legislation to protect significant habitat for wildlife, including species at risk and migratory birds. These federal protected areas for wildlife were the focus of our audit.

In 2001, we found that Environment Canada lacked up-to-date management plans and species inventories for its protected areas in the Great Lakes and St. Lawrence River basin. Further, we were concerned about inadequate enforcement of regulations pertaining to those protected areas. We recommended that the Department assess the state of its protected areas in the basin, prepare a strategy for managing them, and report regularly on their condition and management. Environment Canada agreed with our recommendations and committed to take appropriate action, contingent on available resources.

In our follow-up work for this chapter, we examined Environment Canada's progress in implementing our recommendations. Although our 2001 audit focused on the Great Lakes and St. Lawrence River basin, the Department manages its activities on a national basis and therefore our follow-up audit examined its management of protected areas from a national perspective.

Why it's important

The federal government has frequently asserted that sound management of Canada's natural resources and biodiversity is critical to ensuring our social, economic, and environmental well-being. However, according to Environment Canada, the wildlife habitat that contributes to Canada's natural heritage is being lost. Habitat loss and degradation is now the single greatest threat to plants and animals in Canada.

The protection and conservation of habitat is critical to Canada's efforts to conserve biodiversity. Environment Canada's protected areas network is intended to provide a safe haven for birds, a home for species at risk, and protection for wetlands that are vital to maintaining water quality and quantity. If Canada's biodiversity is

to be safeguarded, the network's ecological integrity must be actively protected against the increasing threats of human disturbance, development pressures, invasive species, pollution, and climate change.

What we found

- Environment Canada has made unsatisfactory progress in responding to our recommendations on national wildlife areas and migratory bird sanctuaries. These areas are at risk.
- Environment Canada has identified specific threats to each of its protected areas, but the Department has not assessed whether conditions are improving or deteriorating at the sites, nor used the information collected to address threats on a priority basis.
- Environment Canada has developed a national strategy to guide the management of sites in its protected areas network, but the strategy is not being fully implemented. For example, most protected areas still lack up-to-date management plans.
- Environment Canada has not established explicit performance expectations against which progress can be assessed, and does not comprehensively monitor or regularly report on the condition and management of its network of protected areas.
- According to its own analyses, Environment Canada has allocated insufficient human and financial resources to address urgent needs or activities related to the maintenance of sites and enforcement of regulations in protected areas.

The Department has responded. The Department agrees with the recommendation. Its detailed response follows the recommendation in the chapter.



Ecosystems
Protection of Species at Risk

Chapter 5 Main Points

What we examined

As of June 2007, there were 389 species in Canada listed as at risk on Schedule 1 of the *2002 Species at Risk Act*. Under the Act, the Minister of the Environment and the Minister of Fisheries and Oceans are responsible for preparing recovery strategies, action plans, and management plans for species at risk for which they are the competent minister.

In 2001, we found that there was a need for better baseline information to enable the government to effectively manage species at risk. We recommended that Environment Canada, Fisheries and Oceans Canada and Parks Canada develop a comprehensive inventory of species at risk under their jurisdiction and ensure that recovery strategies for these species be developed and implemented. The three organizations agreed with our recommendations.

Although our 2001 audit focused on activities in the Great Lakes—St. Lawrence River Basin, the three organizations manage their activities on a national basis and therefore, for this Status Report we examined progress made on our recommendation by the responsible departments from a national perspective. We also examined compliance with sections of the 2002 *Species at Risk Act,* which came into force after our last audit but which relate to our recommendations. These sections of the Act have specific and prescriptive requirements regarding recovery strategies.

Why it's important

Apart from its intrinsic value as part of Canada's natural heritage, Canada's biodiversity, including wild species of plants and animals, represents a vast storehouse of biological resources. The plants, mammals, and aquatic species found in ecosystems are interdependent and therefore maintaining ecological diversity is important to maintaining the health and integrity of the environment. Although it may go unnoticed by most people, the loss of one or two key species can have ripple effects across an ecosystem with potentially significant effects on our quality of life. According to various scientific sources, human activities in the twenty-first century have greatly increased the rate at which species are disappearing.

What we found

- Environment Canada and Fisheries and Oceans Canada have made unsatisfactory progress in responding to our 2001 recommendation relating to the development of a comprehensive inventory of species at risk, while Parks Canada has made satisfactory progress on this recommendation.
- The three organizations have made unsatisfactory progress in responding to our 2001 recommendation relating to the development of recovery strategies and have not complied with specific deadline requirements established by the *Species at Risk Act*. As of June 2007, recovery strategies should have been completed for 228 species at risk, but recovery strategies completed at that date address only 55 of those species.
- Departments and organizations are also required under the Act to identify to the extent possible, critical habitat necessary for the survival or recovery of species at risk. As of June 2007, critical habitat had been identified for 16 of the 228 species at risk for which recovery strategies were due.
- Despite the progress noted at Parks Canada, the federal government as a whole has made unsatisfactory progress in responding to our 2001 recommendations relating to the development of a comprehensive inventory of species at risk and of recovery strategies. While work is under way to develop appropriate data sharing agreements with third parties, such as provincial and territorial governments, and non-governmental organizations such as Nature Serve, inventory data collections vary across Canada. Ongoing improvements to data quality and data consistency are needed.



Ecosystems
Control of Aquatic Invasive Species

Chapter 6 Main Points

What we examined

Aquatic invasive species include any aquatic organism whose introduction or spread can threaten the environment, the economy, or society, including human health. In its 1995 Canadian Biodiversity Strategy, the federal government committed to prevent, control, or eradicate invasive species that threaten Canada's ecosystems and economy, including aquatic invasive species.

In 2002, we audited the federal government's management of invasive species. We recommended that Fisheries and Oceans Canada, which is responsible for protecting fish and fish habitat in Canada, develop and implement a means to identify and assess the risks posed by aquatic invasive species and use it as a tool for setting priorities and objectives for prevention, eradication, or control of those risks. We also recommended that it put in place a monitoring and reporting system to track the effectiveness of actions taken toward its aquatic invasive species objectives and report annually on progress. The Department agreed with our recommendations and provided an expected completion date of fall 2003 for addressing them.

Since ship ballast water is a very important pathway for the introduction of aquatic invasive species and since Transport Canada is responsible for regulating and controlling ballast water on commercial ships in Canada, we recommended that Transport Canada define best management practices for ship ballast water and establish regulations requiring the application of those practices. We also recommended that it develop and implement a means to monitor, maintain records, and report annually on compliance. The Department accepted our recommendations and committed to regulating and monitoring ballast water accordingly.

This year, we carried out a follow-up audit to determine whether the two departments made satisfactory progress in response to our recommendations.

Why it's important

Aquatic invasive species can fundamentally change the environment they occupy and, by extension, affect its economic value in terms of beneficial uses. For example, invasive species can change a clear, open waterway into a weed-bed, or a sandy beach into a shell-encrusted hazard. Such changes have ripple effects that can disrupt or destroy the native ecology and existing recreational and commercial uses along with it.

Aside from its intrinsic value as part of Canada's natural heritage and beauty, biodiversity in the form of plant and animal life is the source of many "ecological goods and services" and, in that regard, it holds tremendous potential value. Experts have concluded that aquatic invasive species are second only to habitat destruction as a leading cause of biodiversity loss, including local extinctions of species. Studies to date indicate that they cause billions of dollars of damage to Canada's economy every year. For example, one study in 2006 estimated that damages caused by six aquatic invasive species alone cost more than $343 million a year. Currently, approximately 185 alien species have invaded the Great Lakes.

When the habitat of a commercially valuable species is destroyed or if an invader crowds it out by occupying its space or eating its food, the livelihoods of those relying on it are at risk. Sea lampreys, for example, have had a serious negative impact on the Great Lakes fishery. Their aggressive behaviour contributed significantly to the collapse of fish species such as trout, walleye, and sturgeon. Perhaps the most infamous aquatic invasive species in Canada is the zebra mussel, which is widely known to have caused biodiversity loss as well as direct economic costs to industry. For example, in 2002, Ontario Power Generation estimated that, as a direct result of the presence of zebra mussels, operating costs increased by $500,000 and $1 million per year at its Darlington and Pickering nuclear stations.

What we found

- Fisheries and Oceans Canada has made unsatisfactory progress in implementing our 2002 recommendations. While the Department has identified some aquatic invasive species that pose major risks to Canada and put in place biological risk assessment guidelines, the rate at which new alien species are becoming established is exceeding the rate at which the Department is assessing risks. The Department has failed to assess economic and social risks, and priorities and objectives for prevention, control, or eradication of risks posed by aquatic invasive species have not been set.

- In addition, Fisheries and Oceans Canada does not have plans or mechanisms in place for early detection of, or rapid response to, aquatic invasive species and is therefore unprepared to prevent, control, or eradicate potential new aquatic invasive species. It has not monitored or reported how effective its efforts have been at preventing, controlling, or eradicating the aquatic invasive species it has identified.
- Transport Canada has made satisfactory progress in implementing one of our 2002 recommendations. Mandatory regulations for the control and management of ballast water came into force through the *Canada Shipping Act* in 2006. These regulations constitute a major step forward in addressing the issue of aquatic invasive species. Ships entering Canadian waters are now required by law to take steps to manage ballast water to reduce the likelihood of introducing aquatic invasive species.
- Transport Canada has made unsatisfactory progress on our 2002 recommendation related to monitoring and reporting on compliance. While Transport Canada has developed the tools it needs and is gathering information on compliance with its regulations for ships entering the Great Lakes, gaps remain in the Department's compliance monitoring and reporting at the national level.
- We found that risks posed by aquatic invasive species have not been adequately assessed or effectively managed. The federal government is not yet in a position to prevent, control, or eradicate invasive species that pose the greatest threat to Canada's aquatic ecosystems and economy. Much remains to be done to meet commitments made in the federal government's 1995 Canadian Biodiversity Strategy.

Fisheries and Oceans Canada and Transport Canada have responded. Fisheries and Oceans Canada and Transport Canada agree with our recommendations. Their responses follow the related recommendations throughout the chapter.



Ecosystems
Areas of Concern in the Great Lakes Basin

Chapter 7 Main Points

What we examined

In 1987, changes to the Canada–United States Great Lakes Water Quality Agreement committed both nations to develop and implement action plans for cleaning up areas in the Great Lakes basin where the natural environment had been severely degraded. These areas were designated as areas of concern. There are currently 15 in Canada.

The federal government has overarching responsibility for the restoration of areas of concern in Canada, with Environment Canada as the lead department. Remedial action plans developed in cooperation with provinces and municipalities, First Nations communities, and non-government organizations guide restoration and protection efforts at each area of concern. When beneficial uses such as swimming and fishing are no longer impaired and the area has been restored, its designation as an area of concern is removed—known as "delisting."

In 2001, we reported that Environment Canada had not set clear priorities for remedial action. We found gaps in management and governance, and goals to restore and delist areas of concern had not been met. It was not clear how or when the government planned to see areas of concern restored and delisted. We recommended that Environment Canada clarify its role and responsibilities and those of its partners, and that it develop and implement plans for delisting areas of concern, with particular attention to remediating contaminated sediment and addressing the issue of overloaded municipal sewage systems. The Department agreed with our recommendations and committed to developing and implementing action plans.

For this status report, we examined Environment Canada's progress on these issues since our last audit. We examined whether the Department has clarified the roles and responsibilities of all partners; developed and implemented plans for delisting areas of concern, monitored and reported progress toward implementing action plans as the Great Lakes Water Quality Agreement requires; and ensured that the plans are periodically adjusted, as necessary. We also examined the extent to which the actions taken have achieved the government's

objectives and led to the restoration of environmental quality of areas of concern.

Why it's important

The Great Lakes Basin is ecologically important, and its environmental quality is vital to millions of Canadians. It is home to about one third of Canada's population. It contains 8 of Canada's 20 largest cities and provides drinking water for over eight million residents of Ontario. The Basin plays a vital role in the physical, social, and economic life of Canada, supporting almost 40 percent of Canada's gross domestic product, 25 percent of its agricultural production, and more than 50 percent of its manufacturing activity. It also supports rich biological diversity and significant fisheries. Because they hold approximately 20 percent of the Earth's surface fresh water, the Great Lakes also have international significance.

As indicated in the Great Lakes Water Quality Agreement, population growth and economic development in the Great Lakes Basin during the twentieth century have degraded the environmental quality of the region, threatening its economy and the quality of life of the people who live there. For over 20 years, Canada and the United States have been committed to restoring beneficial uses in areas of concern in the Great Lakes.

What we found

- Environment Canada has made unsatisfactory progress on the issues we raised in our 2001 audit. The Department has not ensured that criteria for delisting are specified for each Canadian area of concern. While the Department has recently clarified some responsibilities, it has still not clearly specified who is responsible for carrying out all the required remedial actions, who will pay for those efforts, and within what timelines the actions will be taken. Finally, it has not adequately assessed the extent to which each impairment in each Canadian area of concern has been restored and it has not reported progress to the International Joint Commission as it is required to do under the Great Lakes Water Quality Agreement.
- After more than 20 years, only 2 of Canada's original 17 areas of concern have been delisted—the latest in 2003. Priority actions have been completed for one other area, which is now recognized by the government as an "area in recovery." The majority of impairments to beneficial uses that were originally identified in areas of concern still exist today.
- Two principal sources of contamination continue to impede the government's progress on delisting areas of concern—contaminated sediments, which Environment Canada estimates would cost a total

of $150 million to clean up, and overloaded municipal wastewater systems, which it estimates would cost a total of $2.4 billion to fix. Solving these problems is critical to restoring most areas of concern.

The Department has responded. Environment Canada agrees with our recommendations. Its responses are included with the related recommendations throughout the chapter.



Management Tools and Government Commitments

International Environmental Agreements

Chapter 8 Main Points

What we examined

Canada has signed more than 100 international environmental agreements over the years, the Kyoto Protocol among them, committing it to act on crucial issues such as ocean pollution, fishery conservation, and the protection of endangered species.

In 2004, we reported that lead departments for the agreements we looked at had varying degrees of knowledge about whether they were achieving the objectives of the agreements. Some departments did not always know the environmental results they were achieving under the agreements or, in some cases, the results they were supposed to achieve. Nor were all the departments reporting on the results they had achieved. In 2005, we reported that the government still had no action plan for meeting its 2002 World Summit on Sustainable Development (WSSD) commitments.

For this status report, we examined the federal government's management of information on international environmental agreements to assess the progress it has made since 2004. We examined 20 international environmental agreements in four departments—Environment Canada, Fisheries and Oceans Canada, Transport Canada, and Foreign Affairs and International Trade Canada. We assessed the availability and fairness of the information they had about the agreements' objectives, the means they have established to meet the objectives, their current targets, and their reporting on progress. We also examined how the government plans and reports on progress made against its WSSD commitments.

We did not look at the extent to which the agreements were successful but rather at whether enough information is available for parliamentarians and other interested Canadians to judge whether Canada is meeting its environmental commitments to the international community.

Why it's important

Given the increasing global awareness of risks to the environment caused by human activities, Canada's international reputation depends in part on the credibility it achieves by keeping its international environmental commitments and on its ability to demonstrate the environmental results that it is achieving under the agreements. As one of the world's largest countries, rich in natural resources, Canada also has much to gain from the success of its international environmental agreements—and a corresponding obligation.

What we found

- The government has made unsatisfactory progress toward providing a complete and understandable picture of the results expected from Canada's international environmental agreements. While Environment Canada, Fisheries and Oceans Canada, Transport Canada, and Foreign Affairs and International Trade Canada generally make information available on Canada's obligations under the agreements, they provide less information on the programs and means in place to meet the obligations. In addition, the departments do not generally make complete and understandable information available on the results the government both expected to achieve and has achieved toward fulfilling obligations under the agreements.
- The government has made unsatisfactory progress in planning, monitoring, and reporting the extent to which Canada is meeting its commitments from the World Summit on Sustainable Development in 2002. While it has followed the United Nations Commission on Sustainable Development approach to monitoring and reporting, it still has no longer-term plan for ensuring that it will be in a position to report significant progress on its commitments, while taking into account the review timetable established by the UN.

The departments have responded. The departments agree with our recommendation. Their detailed responses follow the recommendation in the chapter.



Management Tools and Government Commitments
Strategic Environmental Assessment

Chapter 9 Main Points

What we examined

Strategic environmental assessment (SEA) has been required of federal departments and agencies for the past 17 years. It is the federal government's main tool for considering the impact that proposed policies, plans, and programs could have on the environment. A Cabinet directive in 1990 made SEA a requirement for proposals submitted to a minister or to Cabinet for approval when important environmental effects are likely. In 2004, Cabinet made public reporting mandatory whenever a detailed environmental assessment is completed.

Three times previously since 1998, we examined how departments and agencies comply with the Cabinet directive and we have reported weaknesses. This time we examined progress made by selected departments and agencies in implementing strategic environmental assessment since 2004, when we reported that most organizations we examined had not made serious efforts to apply the directive. We said that this was due in large part to insufficient senior management commitment to the directive, lack of central ownership, and no assignment of responsibility and authority to ensure the quality and consistency of the assessment process.

Our audit work for this status report focused on 15 departments and agencies covered in our 2004 audit. We looked at whether selected federal organizations have improved their management and application of SEA and whether they are reporting publicly on their detailed strategic environmental assessments, as required. We also examined whether there has been progress in ensuring accountability for compliance with the Cabinet directive. We looked at whether the Canadian Environmental Assessment Agency provides adequate guidance and support to departments and agencies. We also looked at selected courses offered by the Canada School of Public Service to determine whether they now cover strategic environmental assessment.

Why it's important

Identifying the potential environmental impacts of government policies, plans, or programs before they are implemented allows decision makers to anticipate, prevent, or mitigate potential negative environmental consequences and to enhance any environmental benefits. Our past

reports have highlighted problems such as the high cleanup costs and environmental damage at abandoned mines in the North and the decline of the Atlantic fisheries, which illustrate possible consequences of inadequate environmental foresight.

What we found

- Progress in addressing our 2004 audit observations and recommendations has been unsatisfactory. Despite improvements evident in some areas, we found weaknesses in accountability and transparency—areas fundamental to good management. We could not find evidence that a mechanism exists to hold departments and agencies to account when they do not appropriately apply the directive. Nor did we find evidence that the Privy Council Office challenged departments and agencies on their application of the directive when they have submitted proposals to Cabinet.
- Most of the departments we examined are not preparing public statements of their detailed environmental assessments, as required by the Cabinet directive. When public statements are released, they are generally difficult to locate and often do not contain sufficient information to assure stakeholders and the public that environmental factors have been integrated into the decision-making process—the stated objective of the requirement.
- Of the departments we re-examined that had rated poorly in our last audit, the Canadian International Development Agency and Fisheries and Oceans Canada have made satisfactory progress in developing and implementing SEA management systems. Health Canada's progress has been unsatisfactory.
- We observed deficiencies in completing and tracking strategic environmental assessments in many of the 12 departments whose management systems we examined in 2004. We found that many of these organizations do not consistently apply even the necessary first step of the SEA process. We also found proposals that did not have a detailed SEA, despite the potential for important environmental effects. Furthermore, only 3 of the 12 organizations are complying fully with the public reporting requirement of the directive.
- Training and guidance on SEA has increased and is accessible in courses delivered by the Canada School of Public Service and the Canadian Environmental Assessment Agency. In addition, the three organizations we examined in detail, the Canadian International Development Agency, Fisheries and Oceans Canada, and Health Canada, also provide their employees with training and guidance.



Management Tools and Government Commitments
Greening of Government Operations

Chapter 10 Main Points

What we examined

In its document *A Guide to Green Government*, published in 1995, the federal government provided guidance to departments preparing their first sustainable development strategies as they began to green their operations, policies, and programs. The Guide also incorporated the then recently developed Greening of Government Operations initiative.

We have since audited various aspects of the effort to green government operations and have found little progress to report. Most recently, in our 2005 chapter on green procurement, we said that central guidance and direction to departments on green procurement was inadequate, that Public Works and Government Services Canada had underused its potential to advance green procurement through standing offers used in purchasing, and that sustainable development strategies were not being used effectively as a tool to increase green procurement. We have also previously reported on the extent of government-wide guidance for departments preparing sustainable development strategies, such as in our 2005 chapter on sustainable development strategies, which described efforts to provide government-wide guidance including greening government operations.

Given this past work, for this status report we examined the progress made by the government in providing greening government operations guidance to departments preparing sustainable development strategies as well as the progress made by Public Works and Government Services Canada in greening commodity management.

Why it's important

As one of Canada's largest employers, purchasers, and landowners, the federal government has committed itself to being a leader in promoting environmental and sustainable development practices in Canada. It can significantly reduce the environmental impact of its operations by purchasing goods that are energy-efficient, or that are produced without using or releasing toxic substances, or that can be recycled. Its spending on green products and services can also stimulate innovation and increase their availability. Recently, as part of the latest round of sustainable development strategies, the government identified its

vehicle fleets, green procurement, and energy use in buildings as its three priority areas for greening operations.

What we found

- The government's progress toward providing departments preparing sustainable development strategies with guidance on greening their operations is unsatisfactory. The government-wide targets it produced for departments to use in preparing their strategies were non-specific, reiterated previous objectives, or were open to interpretation, and departments were not required to use them. As a result, departments did not incorporate the targets consistently in their strategies and the government is therefore not in a position to know what progress it is making in greening its operations.
- The government has placed a lot of emphasis on its new commodity management approach to procurement. Given the time elapsed since this new approach was put in place, we found that Public Works and Government Services Canada is making satisfactory progress in greening the commodities we examined, with the exception of its slow progress in developing the integrated comprehensive commodity management plans required by its Commodity Management Framework. In the absence of such integrated comprehensive plans, the Department cannot demonstrate whether it is achieving the optimal balance between greening and the other factors that must be considered in procurement, such as fairness to suppliers and cost savings.

Public Works and Government Services Canada (PWGSC) has responded. PWGSC has agreed with our recommendations and is taking action to address the concerns raised in the chapter. Its detailed response follows each recommendation throughout the chapter.



Previous Audits of Responses to Environmental Petitions
Insurance for Nuclear Operators

Chapter 11 Main Points

What we examined

We sought to determine whether Natural Resources Canada had made satisfactory progress in addressing a recommendation from our 2005 audit of the response to a petition submitted in 2003 on the issue of insurance for nuclear operators. In that response, the Minister agreed to bring forward revisions to the *Nuclear Liability Act* that would update insurance requirements. In 2005, we recommended that Natural Resources Canada begin preparatory work on revisions to the *Nuclear Liability Act* and submit policy proposals to the Minister by late 2005. The Department agreed to implement the recommendation.

Why it's important

The *Nuclear Liability Act* came into force in 1976. It requires that funds be available to compensate people who may have suffered injury or damage as a result of a nuclear incident at an installation, such as a nuclear power generating plant. The *Nuclear Liability Act* holds that the nuclear operator is exclusively liable for any damage arising from radioactive releases. However, the Act limits an operator's liability to a maximum of $75 million. Our 2005 audit of the petition response on this issue found that this amount remained at a level established over 30 years ago and was considerably lower than the coverage in 12 other major industrialized nations.

What we found

Progress is satisfactory. This follow-up audit found that Natural Resources Canada has drafted legislation that was introduced in Parliament in October 2007 as Bill C-5. Among other things, the proposed legislation updates the mandatory insurance requirements for nuclear operators.



Previous Audits of Responses to Environmental Petitions
Listing of Species at Risk

Chapter 12 Main Points

What we examined

We sought to determine whether Environment Canada had made satisfactory progress in addressing a significant observation made in our 2005 audit of the response to a petition submitted in 2002 on developing guidelines for listing species at risk. In the response, the Minister of the Environment agreed to develop such guidelines. Our 2005 audit noted that the Department planned to have these guidelines in place by 2006.

Why it's important

The *Species at Risk Act* is one of the legal cornerstones for the protection of wildlife in Canada, helping to conserve and protect species and ultimately biodiversity. Under the Act, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) assesses the status of species and advises on whether the species should be added to the List of Wildlife Species at Risk. A species not listed does not benefit from the provisions of the Act. Currently, there are no public guidelines available for the government and the Minister to use when deciding not to list a species that the Committee has assessed as being at risk. Final guidelines would help confirm that the government's decision-making process on the protection of species at risk is consistent, systematic, and transparent.

What we found

Progress is unsatisfactory. Environment Canada has not yet finalized its guidelines for dealing with cases in which the Minister recommends not adding to the List of Wildlife Species at Risk a species assessed by COSEWIC as being at risk. Although the Department has drafted guidelines, they are not publicly available, have changed over time, and are not applied consistently or systematically. In the meantime, 20 species that COSEWIC has assessed as at risk have not been listed due to socio-economic reasons and a requirement for additional consultation with the Nunavut Wildlife Management Board.

Environment Canada has responded. Environment Canada agrees with our recommendation. The Department's detailed response follows the recommendation in the chapter.



Previous Audits of Responses to Environmental Petitions
Military Dumpsites

Chapter 13 Main Points

What we examined

We sought to determine whether National Defence had made satisfactory progress in addressing key observations from our 2004 audit concerning military dumpsites off Canada's Atlantic coast. In 2004, we noted that the federal government was taking action to identify and assess the risks of these sites in accordance with its response to a petition in 2002. National Defence indicated that it was on target to complete work by 2006 on the Underwater Unexploded Explosive Ordnance (UXO) Project and by 2008 on the Warfare Agent Disposal Project. We made no recommendation in 2004 because it was too early to determine whether the Department would meet the timelines set.

Why it's important

A legacy of chemical, biological, and unexploded explosive ordnance remains from various military activities over the past century at land-based sites across Canada and off its coasts. Historically, these sites have posed only a small risk to Canadians because of their remote locations. Since the end of World War II, however, the sites have faced encroachment from offshore petroleum activities, human interaction, and ocean trawling. Encounters with unexploded explosive ordnance have caused injuries and a number of fatalities since 1940.

What we found

Progress is satisfactory. National Defence has made satisfactory progress in carrying out its commitments to identify and assess the risks of unexploded explosive ordnance and/or chemical and biological warfare agents in ocean-based dumpsites. However, we noted that the identification and risk assessment of these sites are only the first steps in a long-term management approach that will now include almost 700 ocean-based sites and more than 700 land-based sites containing unexploded explosive ordnance.

National Defence has responded. The Department agrees with our recommendation regarding the development of a consistent methodology for charting underwater unexploded explosive ordnance sites on nautical charts and has begun to address it.



Previous Audits of Responses to Environmental Petitions
Genetically Engineered Fish

Chapter 14 Main Points

What we examined

We sought to determine whether Fisheries and Oceans Canada had made satisfactory progress in addressing a recommendation from our 2004 audit, which found that the Department had made little progress on developing regulations and a policy framework covering genetically engineered fish. These were commitments made in response to a petition in 2001. In its response to our audit, Fisheries and Oceans Canada agreed to develop a regulatory approach and a new policy by 2005.

Why it's important

Research on genetically engineered (GE) fish and other aquatic organisms began in the early 1980s and has increased rapidly around the world. GE fish are being developed for use in medical applications, to detect pollution, and as aquarium pets. The aquaculture industry is developing GE fish that grow faster than wild fish and that better tolerate cold temperatures. There are concerns about the potential ecological impacts of an accidental release of GE fish into natural ecosystems. For example, faster-growing GE fish may out-compete wild fish for food and territory. Canada's current regulations in this area have weaknesses.

What we found

Progress is unsatisfactory. Since the establishment of the Federal Biotechnology Regulatory Framework in 1993, Fisheries and Oceans Canada has frequently committed to developing regulations covering transgenic aquatic organisms, including genetically engineered fish. Although it has been working on this matter since 1993, Fisheries and Oceans Canada has not made satisfactory progress toward completing the regulations.

Fisheries and Oceans Canada has responded. Fisheries and Oceans Canada has accepted our recommendation. The Department has decided that the *Canadian Environmental Protection Act, 1999* (CEPA, 1999) provides the regulatory framework for GE fish. It is participating in a CEPA, 1999 regulatory review that may address the issues raised in this audit.

Appendices

Appendix A *Auditor General Act*—Excerpts

An Act respecting the Office of the Auditor General of Canada and sustainable development monitoring and reporting

INTERPRETATION

Definitions

2. In this Act,

"appropriate Minister"

"appropriate Minister" has the meaning assigned by section 2 of the *Financial Administration Act*;

. . .

"category I department"

"category I department" means

(a) any department named in Schedule I to the *Financial Administration Act*,

(b) any department in respect of which a direction has been made under subsection 24(3), and

(c) any department, set out in the schedule;

"Commissioner"

"Commissioner" means the Commissioner of the Environment and Sustainable Development appointed under subsection 15.1(1);

. . .

"sustainable development"

"sustainable development" means development that meets the needs of the present without compromising the ability of future generations to meet their own needs;

"sustainable development strategy"

"sustainable development strategy", with respect to a category I department, means the department's objectives, and plans of action, to further sustainable development.

DUTIES

Examination

5. The Auditor General is the auditor of the accounts of Canada, including those relating to the Consolidated Revenue Fund and as such shall make such examinations and inquiries as he considers necessary to enable him to report as required by this Act;

Annual and additional reports to the House of Commons

7. (1) The Auditor General shall report annually to the House of Commons and may make, in addition to any special report made under subsection 8(1) or 19(2) and the Commissioner's report under subsection 23(2), not more than three additional reports in any year to the House of Commons

(a) on the work of his office; and,

(b) on whether, in carrying on the work of his office, he received all the information and explanations he required.

Idem

(2) Each report of the Auditor General under subsection (1) shall call attention to any thing that he considers to be of significance and of a nature that should be brought to the attention of the House of Commons, including any cases in which he has observed that

(a) accounts have not been faithfully and properly maintained or public money has not been fully accounted for or paid, where so required by law, into the Consolidated Revenue Fund;

(b) essential records have not been maintained or the rules and procedures applied have been insufficient to safeguard and control public property, to secure an effective check on the assessment, collection and proper allocation of the revenue and to ensure that expenditures have been made only as authorized;

(c) money has been expended other than for purposes for which it was appropriated by Parliament;

(d) money has been expended without due regard to economy or efficiency;

(e) satisfactory procedures have not been established to measure and report the effectiveness of programs, where such procedures could appropriately and reasonably be implemented; or

(f) money has been expended without due regard to the environmental effects of those expenditures in the context of sustainable development.

STAFF OF THE AUDITOR GENERAL

Appointment of Commissioner

15.1 (1) The Auditor General shall, in accordance with the *Public Service Employment Act*, appoint a senior officer to be called the Commissioner of the Environment and Sustainable Development who shall report directly to the Auditor General.

Commissioner's duties

(2) The Commissioner shall assist the Auditor General in performing the duties of the Auditor General set out in this Act that relate to the environment and sustainable development.

SUSTAINABLE DEVELOPMENT

Purpose

21.1 The purpose of the Commissioner is to provide sustainable development monitoring and reporting on the progress of category I departments towards sustainable development, which is a continually evolving concept based on the integration of social, economic and environmental concerns, and which may be achieved by, among other things,

(a) the integration of the environment and the economy;

(b) protecting the health of Canadians;

(c) protecting ecosystems;

(d) meeting international obligations;

(e) promoting equity;

(f) an integrated approach to planning and making decisions that takes into account the environmental and natural resource costs of different economic options and the economic costs of different environmental and natural resource options;

(g) preventing pollution; and

(h) respect for nature and the needs of future generations.

Petitions received

22. (1) Where the Auditor General receives a petition in writing from a resident of Canada about an environmental matter in the context of sustainable development that is the responsibility of a category I department, the Auditor General shall make a record of the petition and forward the petition within fifteen days after the day on which it is received to the appropriate Minister for the department.

Acknowledgement to be sent

(2) Within fifteen days after the day on which the Minister receives the petition from the Auditor General, the Minister shall send to the person who made the petition an acknowledgement of receipt of the petition and shall send a copy of the acknowledgement to the Auditor General.

Minister to respond

(3) The Minister shall consider the petition and send to the person who made it a reply that responds to it, and shall send a copy of the reply to the Auditor General, within

(a) one hundred and twenty days after the day on which the Minister receives the petition from the Auditor General; or

(b) any longer time, where the Minister personally, within those one hundred and twenty days, notifies the person who made the petition that it is not possible to reply within those one hundred and twenty days and sends a copy of that notification to the Auditor General.

Multiple petitioners

(4) Where the petition is from more that one person, it is sufficient for the Minister to send the acknowledgement and reply, and the notification, if any, to one or more of the petitioners rather than to all of them.

Duty to monitor

23. (1) The Commissioner shall make any examinations and inquiries that the Commissioner considers necessary in order to monitor

(a) the extent to which category I departments have met the objectives, and implemented the plans, set out in their sustainable development strategies laid before the House of Commons under section 24; and

(b) the replies by Ministers required by subsection 22(3).

Commissioner's report

(2) The Commissioner shall, on behalf of the Auditor General, report annually to the House of Commons concerning anything that the Commissioner considers should be brought to the attention of that House in relation to environmental and other aspects of sustainable development, including

(a) the extent to which category I departments have met the objectives, and implemented the plans, set out in their sustainable development strategies laid before that House under section 24;

(b) the number of petitions recorded as required by subsection 22(1), the subject-matter of the petitions and their status; and

(c) the exercising of the authority of the Governor in Council under any of subsections 24(3)to (5).

Submission and tabling of report

(3) The report required by subsection (2) shall be submitted to the Speaker of the House of Commons and shall be laid before that House by the Speaker on any of the next fifteen days on which that House is sitting after the Speaker receives it.

Strategies to be tabled

24. (1) The appropriate Minister for each category I department shall cause the department to prepare a sustainable development strategy for the department and shall cause the strategy to be laid before the House of Commons

(a) within two years after this subsection comes into force; or

(b) in the case of a department that becomes a category I department on a day after this subsection comes into force, before the earlier of the second anniversary of that day and a day fixed by the Governor in Council pursuant to subsection (4).

Updated strategies to be tabled

(2) The appropriate Minister for the category I department shall cause the department's sustainable development strategy to be updated at least every three years and shall cause each updated strategy to be laid before the House of Commons on any of the next fifteen days on which that House is sitting after the strategy is updated.

Governor in Council direction

(3) The Governor in Council may, on the recommendation of the appropriate Minister for a department not named in Schedule I to the *Financial Administration Act*, direct that the requirements of subsections (1) and (2) apply in respect of the department.

Date fixed by Governor in Council

(4) On the recommendation of the appropriate Minister for a department that becomes a category I department after this subsection comes into force, the Governor in Council may, for the purpose of subsection (1), fix the day before which the sustainable development strategy of the department shall be laid before the House of Commons.

Regulations

(5) The Governor in Council may, on the recommendation of the Minister of the Environment, make regulations prescribing the form in which sustainable development strategies are to be prepared and the information required to be contained in them.

SCHEDULE
(Section 2)

Atlantic Canada Opportunities Agency

Agence de promotion économique du Canada atlantique

Canada Revenue Agency

Agence du revenu du Canada

Canadian International Development Agency

Agence canadienne de développement international

Economic Development Agency of Canada for the Regions of Quebec

Agence de développement économique du Canada pour les régions du Québec

Parks Canada Agency

Agence Parcs Canada

Appendix B Report on the audit of the President of the Treasury Board's report *Tabling of Crown Corporations' Reports in Parliament*

Tabling in Parliament for parent Crown corporations: Annual reports and summaries of corporate plans and budgets

Section 152 of the *Financial Administration Act (the Act)* requires the President of the Treasury Board to lay before each House of Parliament, no later than 31 December of each year, a report on the timing of tabling, by appropriate ministers, of annual reports and summaries of corporate plans and of budgets of Crown corporations. The Act also requires the Auditor General to audit the accuracy of the report on the timing of tabling and to present the results in her annual report to the House of Commons.

The President of the Treasury Board's report on the timing of tabling was included in the *2007 Annual Report to Parliament—Crown Corporations and Other Corporate Interests of Canada*, which was tabled on 16 January 2008.

At the time that our October 2007 Report was going to print, we were unable to include the results of the above-noted audit because the President of the Treasury Board's report had not yet been finalized. Our Auditor's report was subsequently appended to the President's report and is reproduced in this report to Parliament.

AUDITOR'S REPORT

To the House of Commons

As required by subsection 152(2) of the *Financial Administration Act*, I have audited, for the year ended 31 July 2007, the information presented in the report *Tabling of Crown Corporations' Reports in Parliament* included in the *2007 Annual Report to Parliament—Crown Corporations and Other Corporate Interests of Canada*. The reports are the responsibility of the President of the Treasury Board. My responsibility is to express an opinion on the information included in the report, as required by section 152, based on my audit.

I conducted my audit in accordance with the standards for assurance engagements established by the Canadian Institute of Chartered Accountants. Those standards require that I plan and perform an audit to obtain reasonable assurance as to whether the information disclosed in the report is free of significant misstatement. My audit included examining, on a test basis, evidence supporting the dates and other disclosures provided in the report.

In my opinion, the information presented in the report *Tabling of Crown Corporations' Reports in Parliament* is accurate, in all significant respects, in accordance with its section Deadlines for Tabling in Parliament and Results Achieved.



Richard Flageole, FCA
Assistant Auditor General
for the Auditor General of Canada

Ottawa, Canada
23 November 2007

Status Report of the Commissioner of the Environment and Sustainable Development to the House of Commons—March 2008

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